

Original Correspondence.

FIRE-DAMP IN COAL MINES.

APPLICATION OF THE LAW OF DIFFUSION TO THE INDICATION OF ITS PRESENCE AND AMOUNT.

SIR,—It had been represented to me that Fire-Damp would become harmless if its presence in a mine could be made known by a signal in the manager's office, the essential condition being that such means of indicating should be self-acting, entirely free from man's agency.

In September, 1862, I, by the kindness of Mr. Robert Hunt, F.R.S., and the equally marked kindness of Mr. James Allport, made a visit to some coal mines in the Midland district, with a view to see the exact conditions to be met; and, by visiting a pit charged with explosive gas, I experienced the precise nature of the gas with which I had to deal in its actual position. It was with these ideas that I entered a pit known to contain "fire-damp," and I paid three visits to a portion of that pit which contained an explosive mixture of fire-damp. The mixture had a faintly alcoholic odour, and produced a peculiarly helpless feeling, very like that which appears to be produced by arsenic on sparrows. On the third visit it occurred to me that had my head been an India-rubber balloon I could have brought out with me some of that gas. This thought I elaborated into a proposition to indicate the presence of Fire-Damp by the agency of Endosmose, or, as it is now happily called, Diffusion; and I have found that the diffusion of gases through septa gives me a motive-power by which I can telegraph to a distance, as well as give an audible signal at the actual seat of danger—the locality in which fire-damp exists. I have not the permission of the various owners, therefore I prefer not to name the coal mines in which I have practically tested my apparatus; but I have in the Newcastle district tried several experiments, and have there proved, in several pits that, under all circumstances, my apparatus gives unvarying and reliable results, the miners themselves expressing their utmost confidence in my apparatus.

Gases would appear to be formed of minute atoms, which have motion amongst themselves, rapid or slow, in proportion to the density of the gas experimented upon. This motion of the atoms is not confined to each individual gas, but the atoms of one gas pass freely through and amongst the atoms of another gas, thus producing a perfect mixture of any two gases which are so circumstanced as to admit of the requisite motion. The atoms of a gas are not arrested in their motion by septa of porous substances—that is, substances impervious in the ordinary acceptance, but not absolutely so. Such substances include thin India-rubber, artificially prepared graphite, unglazed earthenware, &c. The law of diffusion, as deduced by Mr. Thomas Graham, F.R.S., would appear to be as follows:—A gas diffuses into another gas or into space in the inverse ratio to the square root of its density.

In the application of this law to the indication of the presence of fire-damp I follow my original thought, and use India-rubber. I fill a balloon of thin India-rubber (just such a balloon as that used by children for a plaything) with atmospheric air, and I place it under a lever. If now the apparatus be carried into a mine containing fire-damp, the fire-damp diffuses into the balloon, in accordance with the above law, quicker than the atmospheric air diffuses out from the balloon, and the result is that there is an increase of volume within the balloon, and this causes expansion, just as would occur if so much air were forced into it. I cause this increase of size to move a lever, and thereby to make a galvanic circuit, and so to telegraph to a distance, while it also rings a bell on the spot. This particular arrangement is intended to give warning of a slow accumulation of fire-damp, and in practice it answers perfectly, giving at each interval of an hour the increasing amount per cent. of fire-damp present at that part of the mine. Supposing the atmosphere, then, to remain without alteration the balloon remains of the same size, consequently the alarm would ring continuously for several days, but if the mine were purified, the balloon would shrink in consequence of diffusion, and the alarm would cease.

If it be desired to give instant notice to the men at work, or to the people above ground, from the working places, I use a porous battery-cell, which, with a small column of mercury, gives warning in a few seconds of a sudden irruption of fire-damp. The action of this instrument is so immediate that, unless seen, it would appear to be incredible; it is, nevertheless, trustworthy and certain. Supposing the atmosphere which has caused the indication to remain unaltered, then the instrument empties itself by effusion, and the indicator returns to the original zero, and remains at that point until the mine is ventilated, when the indicator retires from zero, thus indicating the purification of the dangerous place. These remarks also apply to the pocket instrument described below.

The instruments above spoken of are intended to give warning alone; but if it be desired for the information of viewers, inspectors, owners, and others to ascertain the amount per cent. of fire-damp present in the air of mines, I vary the form of my apparatus, but the most convenient form is that which is assumed in the small aneroid barometer for the waistcoat pocket. The mercurial barometer, when fitted with the necessary accompaniments, gives very satisfactory results, as also does a column of mercury, not representing a barometer. As regards the aneroid barometer, I remove the brass back, and replace it by a piece of porous tile—the ordinary biscuit-ware of Wedgwood. In my first experiments I used a piece of a broken flower-pot, which gave as good results as could be wished for. The instrument so completed, with a few additional and purely mechanical arrangements, which I would describe were there space in this letter, may be used as an ordinary aneroid barometer, but at the time of using it, to tell the amount of fire-damp present, it is necessary to close a valve by a small screw. Then having read the point at which the barometer stands, and noting this as the zero, to remove a brass cap, which protects the porous tile; and if there be any fire-damp present the hand travels over the face of the dial, because the diffusion of the fire-damp into the chamber of the aneroid barometer causes an increased volume, which, being compelled to occupy a fixed space, causes pressure on the partly exhausted chamber within that space, and thus causes the hand to move over the face of the dial, indicating unfailingly the amount per cent. of explosive gas. In round numbers, 1 per cent. of gas is equal to .01 inch, and 10 per cent. of gas to 0.10 inch on the aneroid barometer. The following results were obtained in the presence of experienced miners. I will, for this occasion, call my Indicator an Aneroid Barometer:—

Aneroid Barometer indicated 1.00 per cent. of fire-damp. The Davy lamp gave no indication.
Aneroid Barometer indicated 5.00 per cent. of fire-damp. The gas could be detected by the Davy Lamp, which gave a small pale blue flame.
Aneroid Barometer indicated 8.00 per cent. of fire-damp. The Davy Lamp exploded.
Aneroid Barometer indicated 10.00 per cent. of fire-damp. The Davy Lamp exploded fiercely.

Aneroid Barometer indicated 0.00 per cent. of fire-damp. The Davy Lamp did not explode, but flame elongated greatly.

Royal Mint, Oct. 3.

GEORGE F. ANSELL.

THE EXISTENCE OF COAL BENEATH AND AROUND LONDON.

SIR,—The question of the presence of the great coal formation beneath the more recent geological deposits of Central and Southern England, assuredly is a national one of paramount importance, and, obviously, before any actual experiments are attempted to solve this pregnant problem, it is of the first importance to adduce any information, either of a practical or scientific character, that may have a tendency to elucidate this stirring subject. Will you, therefore, allow me to remind your readers that this matter was very elaborately treated in the columns of the *Mining Journal* of 1854, in a series of papers by Mr. Joseph Holdsworth, especially in the one "On the probable Extension, by Geological Induction, of the Central English Coal Fields beneath the Secondary Formations," and which is rife in information of a comprehensive and valuable character.

Mr. Holdsworth was, I believe, the first to test the correctness of his own views on this great question, in a spirited trial of upwards of three years' duration, by sinking and boring on his estates, for the purpose of ascertaining the existence of the carboniferous series there, beneath the Lias and New Red Sandstone formations, and he did succeed in putting the fact of its deposition in that position beyond a doubt, and of which extensive publicity was given at the period. Subsequently, he was invited to investigate similar undertakings, some of which resulted in important geognostic discoveries. He had, he says, "been induced to take a somewhat prominent part in these experiments, and, in fact, very generally to advocate the discovery of coal under the Secondary formations of England (to say nothing of its importance locally and nationally), solely because experience—an expensive experience—and a long series of close and widely-extended practical investigations, have embued my mind with a settled

conviction of its sub-existence there in vast areas of country." A reprint of one of his earlier addresses on these occasions appeared in the *Journal* in the spring of the year above referred to, throwing considerable light on this interesting and long-mooted question, and which surely we may now—with the vast appliances at command—reasonably hope some adequate trial, judiciously made, in our Secondary or even Tertiary districts may before long successfully solve.—Oct. 25.

S. C. T.

TIN MINES—TIN SMELTERS—TIN TRADE.

IMPORTANT TO SHAREHOLDERS.

SIR,—Allow me to ask, through the *Journal*, what on earth are the managers and shareholders in tin mines doing or thinking of in allowing the produce of their mines to be wilfully sacrificed by selling at the present low prices of black tin? Before the American war broke out black tin was bringing some 80*l.* to 90*l.* per ton, and now the war is over, with scarcely a ton of tin to be got in that country, we are quietly submitting to the ridiculously low price of 50*l.* to 55*l.* per ton. It is perfectly monstrous to even for a moment think of this. The Americans are only just now beginning to buy, and the stocks of both foreign and English tin are being quickly disposed of for export and home consumption. The tin smelters ought at once to raise the price 10*l.* to 15*l.* per ton at least. I expect to see it up, ere long, 20*l.* to 25*l.* per ton, which would make many tin mines soon pay dividends instead of, as at present, calling on adventurers. The sooner tin mine managers, pursers, secretaries, committees, and, in fact, shareholders themselves, combine, by holding meetings, and insisting on much higher prices for their black tin, the better. If they cannot get an advance of 12*l.* to 15*l.* per ton at least, then let the mines stock their tin, and borrow money on it of their bankers or financial companies. There are many bankers in Cornwall who would be but too glad to lend money at the rate of 5 to 6 per cent. per annum on the black tin, for (say) 6, 12, or 18 months. Copper has gone up the last 10 days 10*l.* per ton, and likely soon to see a further rise of 10*l.* or 15*l.* per ton. Lead also will advance. The county of Cornwall has suffered greatly the last three or four years from low prices of metals, and shareholders in mines have made very heavy losses in consequence, but the time has now arrived when they may take heart, and instead of disposing of their shares at present depressed prices, let them buy more to average. To tin smelters I say—"Do your duty to the tin mines;" to shareholders in tin mines I say—"Do your duty, and not sacrifice your produce and property."

Oct. 24.

ONE LARGELY INTERESTED.

THE PROPOSED LEGISLATION FOR CORNISH MINES.

SIR,—It will be well remembered by your readers that in May last numerous meetings were held in Cornwall to condemn the Bill which Lord Kinnaird attempted to introduce in the House of Lords, under the title of "A Metalliferous Mines Bill." Of those meetings that held at Camborne was, perhaps, the most important, because there were present at it most of the influential of the mine agents in West Cornwall. The course adopted by Dr. George Smith, the Chairman at that gathering, was excellent. He first introduced the subject by a short speech, and then called on Mr. F. Hill to explain the clauses of the Bill in detail. This being done, certain resolutions condemnatory of the Bill, and couched in no mild language, were proposed, seconded, and carried unanimously by the mine agents present. After this, remarks were invited from those present bearing on the subject generally. As may be readily understood, the simple reading of the clauses of the proposed Bill, one of which was to compel the erection of man-engines or skips in every mine beyond a certain depth; another, the regulation of the currents of air with the same care as in a coal mine; and, above all, the carrying out of such rules to be under the control of the Board of Trade, and against whose decision there could virtually be no appeal, was quite sufficient to make all the practical miners present unhesitatingly condemn the Bill, in which such unnecessary and mischievous measures were embodied. It is much to be regretted, however, that the agents who spoke at that meeting did not go beyond a general condemnation of the Bill, and enter more fully into their objections to the details of each clause. It is true Capt. Joseph Vivian explained how impossible it would be for North Roskear Mine to sustain the expense of erecting a man-engine, when to do so would require the sinking of a new shaft from the surface. This remark was most pertinent, and carried with it a practical objection to the Bill. It is true, also, that Capt. Charles Thomas urged the impracticability of controlling the mines from the Board of Trade, admitting at the same time that some sort of controlling board, whose duty it should be to inspect the ventilation, and the modes of ascending and descending the shaft, and their continuations, which the miners have to pass through, would result in good to the working miners. Beyond these remarks, however, I failed to glean from all the other speeches that were made any definite objections to the Bill, or any other practical suggestions in the matter. Capt. William Tague, a most competent miner, spoke but in a very general way, and Capt. R. Grylls condemned, as usual, everybody and everything, but the management of Condurrow Mine. I know that to the practical miner the objections to the Bill are so apparent that he almost laughs at the necessity of refuting the bill in detail; still, that sort of general pooh-poohing will not do any longer, for a bill we shall certainly have, and the great object of the miner should be to guide those who will legislate by practical suggestions. Some of the agents at the meeting at Camborne went so far as to deny the necessity of any kind of board of control, stating that the present management of our mines was excellent. In answer to this, I will just give you the particulars of a recent visit I made to a Cornish mine, in the condition of some of the deep ends of which I was much interested. Well, arrived at the mine, I changed my clothes in the counting-house, and not in the ordinary drying-house, and then started away with one of the agents for a good long day underground. There was no man-engine in the mine, and we had, therefore, to descend by the ordinary ladder-road, down which, in due course, I followed the agent. We had got a little past the 20 fathom level when I heard a slip below me, and my companion sung out, "I quite forgot that stove; look out as you come down." There was one gone some days ago, and now there is a second gone to keep it company." Being thus forewarned I was forearmed, and so successfully passed the gap. When we arrived at the next landing I asked my companion how long the staves had been gone, and he replied, "One went some three weeks ago, but I only missed the second yesterday." I may add here that the landing on which this was said was just large enough for us to stand on together, holding one another. The shaft was roomy, and the landing might have been made much larger than it was. Well, down we went again, till we came, without further adventure, to the 130 fm. level, where we stopped our downward course to examine one of the ends at this depth. Thus intent, we walked along the level in silence for some minutes, and then the Captain, who was preceding me, said, "Look sharp, here is a nasty hole." I looked up, and saw him crossing a chasm which formed a communication with the level below, on a plank some 8 inches wide. With care we crossed it in safety; and, having examined the end, passed on to those other parts of the mine I wished to examine, started on our upward journey, and reached grass in safety. Soon we were washed, changed, and sitting down to an excellent Cornish paste, followed by a strong hot glass of grog. Then, and not till then, did I question the captain about the aforementioned staves that were missing in the ladder, and the 8-in. plank, and expostulated with him on the danger of leaving such open invitations to accident. The Captain, a fine, strong, muscular fellow, and an excellent agent, of good repute, seemed to be quite amused, and eyed me with a glance not very flattering to my vanity. I saw immediately the utter uselessness of talking to him on the matter, as he met my reproaches with the simple remark, which seemed quite to satisfy him, "There has been no accident in this mine since I have been agent, now some three years." When I left the mine, shortly after, I became fully determined to support any good measure for instituting a periodical examination of the underground condition of our Cornish mines. Arguing to myself that if the agents of a mine will not see that the staves in the underground ladders are replaced as soon as lost, that proper resting places are made for the men at short intervals, and all the regular roadways underground properly defended, it is high time that somebody should step in and compel them to do it. Capt. Charles Thomas must be aware of the occasional want of that care in the underground arrangements of some of our Cornish mines—although, thanks be, such faults do not often occur in our better regulated mines—when he admitted the desirability of some local board of inspection. After many years contact with mining, not only in Cornwall, but in many foreign countries, I have never met a better class of miners than our Cornishmen; but I must say I have never met men who despise so absurdly as they do the knowledge of others who have passed through the same school of learning, or a class so utterly envious of one another as the Cornish mine agents. It has been for a long time past an acknow-

ledged advantage by all the great labouring communities of England, and the world at large, to meet from time to time to receive and impart information on the subjects they are most interested in. The Cornish mining association, it has been attempted to gather them together as a class mining subjects. Perhaps, and I hope most sincerely that it may be the case, the proposal which Capt. William Tague has made for an association of the mine agents will meet with more success than the previous ideas for the same purpose. It is high time that the Cornish miners be put on their feet, for unless they now bestir themselves they will lose the opportunity of averting the interposition of those whom they so mortally dread—scientific men.

THE COPPER SMOKE QUESTION.

SIR,—Your correspondent, Dr. Gurli, after an elaborate and intelligent resumé of the present position of the Copper Smoke Question, at the close of his letter propounds his mode of solving the difficulty, which is by the conversion of the sulphurous acid into solid sulphur;—on this proposal I have some right to say a word, as in July, 1854, I patented the effecting of this object by means exactly such as those he proposes. On referring to my specification, dated January 25, 1855, I find that I propose bringing sulphurous acid gas into contact with carbonaceous matters, such as coke, charcoal, peat-charcoal, or other deoxidising substances, kept at a red heat, but not subjected to combustion, by admission of air, &c. As the result of many trials, continued for a considerable period, I found great practical difficulties in the conversion of SO₂ into S, by means of C, difficulties which I am convinced would be quite insuperable in attempting the application of the process to calcining and smelting furnaces; and, in addition to this, the sulphur produced was so inferior in purity and appearance that it could never be brought into the market at all in competition with Sicilian sulphur, but could only have been introduced in competition with pyrites for the use of the vitriol makers. I by no means assert that Dr. Gurli has not overcome the practical difficulties I found, but if so, he has still to work out the problem of its adaptation to the copper ore calciner.

In connection with these observations on your correspondent's letter, allow me, Mr. Editor, the same freedom of remark on your article on Copper Smoke—No. IV. You there very lucidly present the several stages in the process of copper smelting, and point out the fact that, in each of these, equally with the first, sulphur is evolved. From experiments carefully conducted, I am able to verify the fact that the regulus resulting from the first smelting contains, in all cases, from 25 to 28 per cent. of sulphur; and that the next, or red metal, and the blue, white, and purple metal, contain sulphur in nearly as large percentage as the original ore, and that the roasting or calcining of these metals is only or mainly a process for getting rid of the sulphur, which invariably goes off in a gaseous form, and never in the slags except as one of the constituents of shots of regulus, which the careful smelter will, as far as possible, avoid. Taking it, then, for granted, as you do, that Mr. Vivian "has only got a furnace which will enable him to collect the gases evolved in the first calcination," your remark naturally arises—"When, however, the people of Swansea run away with the idea that all the smoke from the copper-works is capable of purification, without in any way interfering with the business of copper smelting, there is great danger of their being disappointed in the result."

Now, Mr. Editor, it is not for me to say that Mr. Vivian can, by means of his furnace, calcine regulus, and red, blue, and purple metal, and condense the gases therefrom; nor will I assert that by any process, the principle of which is a sudden, rapid, and vivid combustion, that object can be accomplished; but this you will allow me to say, that I undertake to effect the calcination of each of these bodies, with the elimination and condensation of the sulphur as sulphuric acid, and without detrimentally interfering with any of the copper smelting processes, and this I state as the result of large experiments in the production of sulphuric acid from regulus; so that the Swansea people may look, and I advise them to look very decisively, not only for the collection of the gases from the first calcining, but for their condensation from one and all of the six processes of the copper smelter except the last stage—that from blister copper to the refined metal, and there the 2 or 3 per cent. of sulphur may be allowed to escape. Even at present roasting the metals is not the universal practice; one large firm, whose works I had the pleasure of inspecting, regularly calcine their first and second metals in furnaces similar to our calciners; the change from these to my calciners would not be a change of process, but merely of apparatus and result, so far as the smoke is concerned.

In conclusion, let me say as my decided conviction, that any furnace, now or heretofore proposed, that will not be applicable to each stage of the process will certainly be a decided failure in curing the nuisance from copper smoke.—Manchester, Oct. 24.

PETER SPENCER.

THE COPPER SMOKE QUESTION.

SIR,—I have read with much interest the articles which have appeared at intervals in the *Journal*, and thinking it desirable that a matter of national importance as Copper Smelting and its consequences should be clearly understood, and knowing your desire that your columns should be used for this purpose, I will at once state wherein I think errors have crept in the articles in question, and then give my own views upon the various schemes, so far propounded, for the cure of the mischief said to be caused by the vapours from the furnaces. It is stated in last week's *Journal* that Mr. Vivian has been somewhat "hasty in his agitation of this question," since his new furnace will only enable him to "collect the gases evolved in the first calcination." This is, doubtless, an error, for the second calcination can also be carried on in the new furnace. Again, remarks are made conveying the idea that the Cornish mines may suffer through the landholders pressing the smelters to annihilate the nuisance. Now, this I do not assent to, because the necessity of Cornish sulphur for mixture with the foreign ores is not only admitted by all, but proved in the fact of the price paid for them being far in excess of that for the foreign, at Swansea.

Mr. Edward Vaughan writes as though he were under the impression that Mr. Vivian's plan is "perfectly successful" to prevent damage to the trees and lands within reach; but methinks it will be found that Mr. Vivian did not intend to be so read, but rather that his plan is effectual for the saving of two-thirds of the sulphur; and this, of course, fails to secure the object Mr. Vaughan desires, for the one-third of the sulphur still escaping will not be satisfactory to the landholders.

It is rumored that Messrs. Williams, Foster, and Co. have a plan under trial which promises greater success than Mr. Vivian's, and also that a Liverpool firm, so often cited, is engaged upon a trial which it is alleged will render any escape of sulphur unnecessary. So far we have three plans before us in the *Journal* for "Smoke Cure"—Mr. Vivian's, Spencer's, and Gurli's. Of the first two I will say, without hesitation, no cure can be hoped for from them in my opinion; and of the third I am inclined to think favourably. My reason for not approving the first two, and approving the third, will be seen at once by the remarks when I remind them that smelting, to be carried on successfully, requires the presence of sulphur in all the processes but the last (refining) stage, the last calcination, and I believe that even in the charges for the roasting 20 per cent. of sulphur is found. Now, this being the case, sulphur in considerable quantities must escape into the air, and this brings me to my main point, that the plans (Vivian's and Spencer's) begin at the wrong end. The cure cannot be effectual by dealing with the volume in its progress, one, two, or three furnaces, but by attacking the whole volume in its progress from all the furnaces—hence I look upon Gurli's plan as the only one in the right direction; but I fear he will not find it so easy as he imagines to accomplish his object on the large scale a copper smelter works present. Still difficulties, at first thought insurmountable, have been overcome, and Gurli need not despair. It is clearly the right end to begin at, and success, sooner or later, must be attained on the fact by beginning. I notice that much stress has been laid on the fact by Mr. Spencer that his calciner will drive off 90 per cent. or more of the sulphur; this I do not stop to examine into, as it is a point of no value in this question of smoke cure, for if all the sulphur be driven off the smelting cannot be carried out.

In burning the sulphurets for the alkali (chemical) works, the object is to obtain the greatest possible quantity of sulphur, and for this purpose the calciner may be most valuable; but in copper smelting the object is to cure the greatest possible quantity of copper, and this can only be done by retaining sulphur to a great extent through all the processes but the last, and consequently I am strongly of opinion that nothing can be done for from the furnaces themselves, however changed or varied by process, but that the cure must be effected after the furnaces have done their work, and this clearly is Dr. Gurli's opinion. The mischief is in the

from the furnaces, and the cure must be found in attacking the
Mineral. Oct. 24. A CONSTANT READER.

TESTING IN VIRGINIA, NEVADA, U.S.

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**MINING TRANSFERS—PROTECTION
AGAINST FORGERY AND DEFAULTERS.**

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PROSPECTS OF THE CHIVERTON DISTRICT.

"My professional duties again calling me into this district, I am desirous to state that what I have long predicted respecting some mines in this locality is on the eve of being confirmed. At NORTH CHIVERTON, where the lodes in an unwrought piece of ground in the 43 is being worked, and with more than ordinary interest, one of which will be met with in the specimens lead it contained, it had every appearance of eventually yielding large quantities of that mineral; in this cross-cut already a branch of lead has been met with, about 4 inches wide, dropping into the lode; these drops when they contain mineral, are always considered of the greatest importance, and are held to be a beneficial effect on the lode. I have always remarked, and which I hold in as much esteem to be a rule, that a lode carrying those small bunches, at such a shallow depth, is a sure precursor of what will follow on deeper descents. Lead is more or less associated with blende, and on its near approach the blende becomes of a risky quality. This is the case here also; for, in clearing the mine eastward, the quality near the 40 is considerably better than anywhere yet seen; although the blende predominates, yet it is undoubtedly a lead lode, the blende gradually passing into the lead, as the depth increases. The same may be said of the places to the south as the increased depth is being attained; but, apart from the blende remains just as much per ton as the average of copper sold throughout the county. This mine is in a precisely similar position to what CHIVERTON MOOR was, I first drew public attention to it—the cutting the lode at about the same depth, and the recovery of one only caused the shares to advance in market prices full 200 per cent, and with such an important object so near accomplishment, I doubt not of a result following here, when the public will eagerly seek after the shares. A branch of lead is also to be met with from the 40 to the 43, and the blende is the CHIVERTON main lode; and, in the course of a short time, one of the richest bearing lodes in the county will be met with, and, I doubt not, will cause a great rise in the market; but, having said so much before in favour of it, I prefer to wait the event, which will shortly tell its own tale.—St. Day, Oct. 24. C. BAWDEN.

SORTRIDGE CONSOLS MINING COMPANY.

As the time is approaching for the half-yearly meeting in this mine venture, I beg to state to my fellow-shareholders the advisableness of having the mines inspected by an independent agent. A great deal of exploratory work has been done within the two years; but the points held out as of most promise have all proved failures. It has been to expect that the western ground offered fair prospects of success, but this work there has been abandoned, if we may judge by the absence of notice of it in the reports, for no information can be obtained at the office. The same applies to Gill's mine, at the 40, which was put out with the intention of proving the western side of the 40, which has been driven from the estimated distance to cut it, and to find out the side; but although the work has been done, no report of it has been made. It has expended long since, no report of the intersection of the 40 and the 40, and four or five holes have been met with in Mayne's cross-cut south, and in the western communicating with it; two of these have been driven on a short distance from the abandoned, from which we can only assume their appearance is certainly probable. The principal work now in progress is the driving a 10 and 20 fathom level, which has been proved at deeper levels years ago, and from which the fact that it can be driven for is that a little tribute ground may be laid open. This, if it can be done, would not by any means be a satisfactory return for the call in prospect, but all we have to look forward to, for the one thing that we can do, is to drive a 10 fathom level, although in the 50 fm. level being very shallow, owing to the nature of the ground it appears to be, from the report in last week's Journal, a kind of counter-marsh level, as it is termed, and in the course of last week the boundary was reached, and the level was turned over to the part of the lode. As these two parts can be only a few feet apart, it must not be trifling with the funds if it is intended to drive the level at all so short a distance. The nature of mining, as of all other business, is that it would be far wiser to wind-up the concern at once, unless an indication is given that I have proposed should afford ground for opinion very different to that now given.

A SHAREHOLDER.

RAIL Locomotive.—Mr. Edward N. Dickerson, whose controversy Mr. Isherwood, Engineer-in-Chief to the United States Navy, has brought prominently into public notice, has designed a novel arrangement for railway locomotives. The engine driver is placed forward of the boiler, directly over the spot where the smoke chimney of the engines now in use is placed. The engine will retain its station behind the boiler. The boiler, being of an entirely different form from those in use at the present time, will enable the locomotive, water and coal both to be in one continuous frame, so that there will be no tender. The engine will be 30 in. in diameter, and 56 in. stroke. The valve motion and the motion of the pistons will be in one continuous motion. We learn that it is being constructed at Providence, R. I., and that it will be placed on the Erie road, near New York. Mr. Dickerson is undoubtedly right in the expansion theory, and there is not a doubt but that experience will show it so plainly that the theory will eventually be relieved from the present incubus upon the navy department. It may be that he will prove wrong, but we have been all wrong in our locomotive practice. If the new locomotive proves more effective and more economical than our new, none will be more willing to give him all due credit than our railroad men.—*American Railway Times.*

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tained by this form of construction can only be demonstrated by the test of actual service. This will soon be applied, as the company who are the present owners of the patent are now engaged in building several engines of different sizes, which will speedily be put in operation in the vicinity of the city, and ere long the public will have an opportunity of determining the relative economy of the working of this and the ordinary construction of steam-engines.—*New York Tribune*, Sept. 13.

Meetings of Public Companies.

CREDIT FONCIER AND MOBILIER OF ENGLAND.

An ordinary general meeting of shareholders was held at the London Tavern, Bishopsgate, on Tuesday, The Hon. STUART WORTLEY (the Governor) in the chair. The report of the directors (an abstract of which has already appeared in the Journal) was taken as read.

The CHAIRMAN upon rising was received with great applause. He said he had hoped that on account of so satisfactory a report, and the declaration of such an excellent dividend, the present meeting would not have been much more than of a formal character; but, owing to the circumstances under consideration, he felt it to be due to the importance of the subject to have some of the chief topics referred to in the report. As the shareholders were aware, this was the second meeting of the directors' institution,—great he would repeat, notwithstanding it had its detractors, who did their utmost to depreciate it, and which had its effect upon timid shareholders, who allowed themselves to be frightened out of their property. It was his wish, as also that of his fellow-directors, to afford shareholders all the information they could give that would not injure the interests of the company, but beyond that point he should appeal to their forbearance, because theirs was a business which involved not only public but private and confidential transactions; and if they were to be disclosed the result would be a serious diminution of their profits, and an injury to themselves. Did, he would ask, other directors expose their transactions at public meetings like that to the columns of the public press? He would refer to the Barings disclosed all they did in the business world, who so many be willing to go to the wall? He would say was that, within proper bounds, every question that might be put to him he could most readily answer. If shareholders felt dissatisfied let them have no reserve about the matter, but at once avow it. But with such a report as that submitted upon this occasion, in the face of a money market like the present, if any shareholder were weighed down with alarm, there would be no reason whatever why he should not relieve himself. It was true the balance-sheet might be found fault with, but it was equally true that no great bank or financial company presented a fuller one. Even, however, the greatest fault-finders could no fall to see in that balance-sheet some very satisfactory features. For instance, the bills payable had been reduced to £7,500*l.*, which, considering the capital, was not a very small sum. (Hear, hear.) The dividends were £45,771*l.* There had also disappeared, as compared with the April balance-sheet, 54,671*l.* of bullion and office furniture account, and £7,183*l.* for preliminary expenses. Complaints had been previously made that the item of bills receivable was not sufficiently explicit. All he could say was that that item now amounted to £1,317,913*l.*, and the only answer he could give as to the absence of explicitness was in the remarks he had already made for the directors could not with prudence set forth the accounts in relation to things of the kind more fully. (Hear, hear.) All must be aware that even in banking it was the universal practice to give no more particulars than they had in this instance given. For example, let them take the London and Westminster Bank, where they had seen a balance of £16,000,000*l.* In one gross sum; and the Union Bank gave the amount in one item in its balance-sheet. He would not say that the directors, for the simple reason that it was better for all that the balance-sheet should be more explicit than the directors would prudently give particulars be quite ready to do so. (Cries of "No, no.") As regards the position of the company, he was glad to be able to say that, in the face of its bitterest enemies—and there were many such to be found—they had extended its arms into the richest fields of commerce, and had raised it to a point of unimpeachable respectability. (Hear, hear.) He knew that its enemies had been most industrious in circulating reports detrimental to its directors, to its managers, and to its prospects through which many timid shareholders had disposed of their interest. But the directors, and the interests connected to them, were above detraction, although they were not above criticism and inquiry. He would ask the shareholders to despise the false rumours, and to form their own opinions from the statements of their own personal knowledge, that the prediction made at the last meeting had been amply verified by the results of the last six months. The best of business, the best of commission, had been offered to them, and the only difficulty lay in selecting. Had they been disposed to have been in any way reckless their business might have been doubled, but without increasing their profits. Probably some of the shareholders thought that they had better judgment than the directors; if so, he begged to remind them that the latter held a considerable interest in the company, and that there was from week to week a full meeting of the board, notwithstanding the temptations that had been held out to City men during the last two months. They had before them the great and encouraging fact that there was £50,000*l.* surplus, which the directors thought very far indeed, upon a capital of £500,000*l.* He would not, therefore, think that the directors were too liberal in their proposed dividend? Let them secure a minimum dividend of 30 per cent., as had been previously agreed to, by establishing a dividend reserve fund, towards which they had already £70,000*l.*; and, as the present dividend would not absorb the whole of the profits, the balance would ensue the minimum stated. The directors thought that, by giving what was given before—namely, 20 per cent. per annum, and, in addition, a bonus of 30 per

cent.—they would be doing the best they could under the circumstances. A larger dividend might have been given, but in a great institution like theirs a large amount of capital was essential—their privilege, indeed, must be maintained; and, therefore, he thought there were more reasons for not doing so than for doing so. The company had 4,000,000*l.*, their actual capital 2,000,000*l.*, their paid-up capital 500,000*l.*. There might be convulsions and revolutions in states and in politics, but there were no expectations that the shareholders would be called upon for any more, especially if they took his view of the case, and allowed the directors to extend the capital by the issue 100,000 shares. It being an axiom in commerce that time was money, and that capital was both time and money. It was believed by the wisest amongst them that if the capital was increased from 500,000*l.* to 1,000,000*l.*, it would give them much greater power in the commercial world. Could they not do this? They could not do so without raising the market issue at a premium of 3*l.* 10*s.* per share, although they stood at 4*l.* premium in the market, and now shareholders would be allowed to come in at a premium of 3*l.* 10*s.* per share. Having referred to the ungenerous attacks which had from time to time been made upon the company, he said the only satisfaction about such proceedings was that all other great monetary institutions had passed the same unpleasant ordeal—for instance, the London and Westminster Bank had been the object of incessant attack, many of its detractors had oftentimes stated that it went up like a rocket, but would come down like a bomb. He said, and this he had taken up, that he would like to ask the directors of the Foncier de France, and yet he would ask, who would be bold enough to say that now the institution was not the support of the French empire?—Paris, Lyons, and Marseilles had been beautified by its means, as, indeed, had the whole face of France. (Heard and heard.) To revert to their own institution, some had enquired where its reserve fund was invested? He would reply to that enquiry, by asking whether the great houses to which he had referred publicly state where their reserve fund was invested? He should have said to anyone who asked that question, that a half-a-million of castles would think it was working it in an investment, and being bold and which would upon the recurrence of the slightest commotion, would fall 3 or 4 per cent. He had no hesitation in saying that he believed the funds to be one of the least desirable investments of the present day—of course, trustees were obliged to invest in them, but no one else would think of doing so. Therefore, he need hardly say that the company's funds

were at least not enjoyed in that direction; but more than that it would not be the interest of anyone to state. They were invested in available securities, which could be turned to account at any moment. If the directors hid up that sum of 200,000 in the funds they would be accused, like the foolish and slothful servant in the parable, of having hidden in the ground the one talent, and would have been told they had been idle. (Cheers.) He had understood that a gentleman — a member of that profession to which (the Chamberlain) belonged, although he had long since retired from the pursuit of the law — was of opinion that too much had been put to the reserve fund, and that the money, instead of being so disposed of, should go to the benefit of the shareholders. Farther, that a committee should be appointed, with the gentleman himself as Chairman, to report upon the unsuccessful conduct of the business of the company. Although that proposition should be received with respect, he (the Chairman) would prove that it would be the ruin of the affairs of the company, inasmuch as it would annihilate the confidence which was the key to their success. He took upon himself the responsibility of saying that, if the shareholders approved the report of the directors, and adopted it, when the new capital was raised, and the dividend reserve fund formed, the Credit Foncier Mobilier of England would at once take its place as one of the greatest monetary institutions of the world, (Loud cheers.) He concluded by moving that the report be received and adopted.

Mr. LEVICK had much pleasure in seconding the proposition.
Mr. MERRILL, although agreeing with the principle laid down by the Chairman, at the same time thought the directors would have yielded to the wishes of the shareholders if they had stated the amount of the expenses on the debit side, and the gross profit upon the other.

A SHAREHOLDER considered that the premium which the public would have to pay for the new shares was too small, inasmuch as they would at once share all the advantages and profits of the reserve fund, and, therefore, he thought that the 50,000*l.* proposed to be carried to the credit of the profit and loss account should be given to the present shareholders, or allowed to remain under the arrangement that the shareholders should receive shares at 1*1*/₄ prem.

Mr. CARPENTER considered that the reserve fund should be invested in the Three per Cent. Consols, or some similar security, and moved an amendment to that effect, which was seconded by Mr. Bruce.

Mr. EDWARDS was of opinion that the time had arrived when interference with the management should be at an end, and suggested, therefore, that no further question should be asked or answered. — Mr. VINING said the shareholders had in the report the emphatic statement that every security held by the company was taken at the lowest possible value, and that the directors, who, he would ask, could doubt a statement of that kind by so large and respectable a body of men? (Hear, hear.) He accepted it as absolutely true, and suggested, simply for the satisfaction of the public, that the gross profit should be set out in the profit and loss account.

Mr. W. DENT (the newly-appointed director) said that before he joined the board he had personally investigated the accuracy of the balance-sheet. (Hear, hear.)

THE CHAIRMAN, in answer to a question, said that every transaction of importance passed under his observation, and his attendance at the office was daily. But, nevertheless, the managing director was he to whom all the success of the institution was owing. His knowledge of his business was of the most thorough order, and his energy very indefatigable. He, therefore, deserved the thanks of the meeting, and he (the Chairman) moved a resolution thereon accordingly.—A SHAREHOLDER seconded the motion, which was carried by acclamation.

motion, ALLEN D. GRAHAM, in acknowledging the vote, referred to the great difficulties of his position, the minds of some men being so constituted as to find motives of an evil character, or errors of judgment, or pernicious principles, in every act of a man's life. Nothing was prosperous, it was sure to be spoken of disparagingly, and all connected with it were included in the censure. It always happened that the small holders were those most prone to find fault. (Hear, hear.) He could not fathom it, but there was a want of generosity in it that was not pleasant to contemplate. Having explained the nature of a reserve, he proceeded to say that means of that kind were only meant for contingencies. It was the capital that should remain intact. Of course there must be some small all money transactions, and the small amount of about \$100,000 was a very shallow one, but it was a knowledge of trading in money. But the company traded in credit too. What was the use, then, of talking about how their 200,000 were tied up? He said that particular investments the money was embarked, when their credit might

be pledged to millions. And let the shareholders not be afraid if they saw him raising two or three or four millions on debentures, for raise them he would if he could, and benefit the institution accordingly. He again thanked the meeting for its renewed mark of confidence, and resumed his seat amid applause.

GREAT WHEAL GRYLLS MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Austinfranks, on Tuesday,—Mr. PETER WATSON in the chair. Mr. J. H. MURCHISON (the secretary) read the notice convening the meeting, and the minutes of the last were approved.

A statement of accounts was submitted, which showed a debit balance of 68*l.* 14*s.* 9*d.* The report of the agents was read, as follows:—

Oct. 21.—**Michell's lode:** During the past quarter the 12 has been extended east 7 fms., and is now 19 fms. east of Michell's flat-rod shaft; the lode for this distance has produced tinstone of a low quality; the lode in the end at the present time is 2½ ft. wide, composed of spar, peach, and a little tin, but not enough of the latter to set a value on.—**Steven's lode:** The cross-cut at the 12 has been driven 2 fms., and is now 5 fms. S. of south of the cross-cut on Michell's lode, which is 27 fms. west of Michell's flat-rod shaft; from this point (Oct. 21) a drift was sent down the shaft, and a communication to a winze sank from the adit level, east 1 fms., and effected a connection with the 11. The 11 is now 12 fms. east of the shaft, and the value of this part of the mine, and laid open a profitable place of tin ground, the western part of which is set on tribute to four men, at 8s. in 11.; the lode is worth 7½ per fm. This adit is driving by six men, at 31 per fm., and the lode worth 4½ per fm.; this level is also driving west by two men, at 21. 10s. per fm., the lode being worth 21. 10s. per fm. The adit is also driving east, and has effected a connection with the 10, and has sunk a winze 6 fms. in order to make the communication with the 10. The 10 is now 14 fms. east of the shaft, and the value of this part of the mine is 10s. per fm. The 10 is now 14 fms. east of the shaft, and the value of this part of the mine is 10s. per fm. With regard to future prospects, the returns almost solely depended on the value of tin ground that will be driven through at the 12; but, judging from present appearance, we consider the sales will be about 70s. per month, and in order to prosecute the mine vigorously, the engine-shaft must be sunk, which will increase the cost, so as to make the cost of about 300 per month, and the continuation of the 12, and the sinking of a long run of profitable ground to pass through at the 12, on Steven's lode, and by the same operations on different levels there is every reason to think a few months will put the mine in a position to make the returns meet the cost.—E. ROGERS, EDMUND ROGERS.

The CHAIRMAN then proposed that the report be received and entered on the minutes, and the accounts be passed and allowed, stated that, although the operations had not progressed as rapidly as had been, in the first instance, anticipated, yet there was no reason to doubt that the property would be sold at a profit. The company took the minutes, which were read, and the CHAIRMAN then proposed that the company should be dissolved, which was carried. Capt. ROGERS stated that, now all the flat-roofs were at work, as soon as the communication was made to the witness there would be a large quantity of tin found to come away. The CHAIRMAN then said he was desirous to see a cross-cut put out to intersect the three main faults that were seen at and about the adit, because it would prove some of the most important points.

The report was received and ordered to be entered on the minutes, and the accounts were passed and allowed. A call of 2s. per share was made. The committee of management were re-elected.

A vote of thanks to the Chairman terminated the proceedings.

WHEAL GRYLLS MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Austinfriars, on Tuesday,—Mr. PETER WATSON in the chair. Mr. J. H. MURCHISON (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

A statement of accounts made up to the end of August showed a debit balance of 422*l.* 9*s.* 7*d.* The balance of liabilities over assets was 623*l.*

The report of the agents was read, as follows:—

Oct. 21.—Fisher's Lode: During the last quarter the 40 fathom level has been driven 18 fms., and is now this distance east of the flat-rod shaft; the lode for all this distance has produced tinstone that will just pay for stamping; the end at the present time is driving by six men, at 31. 19s. per fm., and by extending this level about 15 fms. further in this direction will bring us under the tin-bearing ground zone down in the level above. At the 30 we have risen and communicated to the pressure shaft, also drive the level 15 fms. 3 ft. east of this shaft, and made another communication to a winze above the level of the level of the level, this being accomplished has given us ventilation, and laid open a profitable piece of ground, the level being now 10 fms. above the 40 fathom, and driving by six men, at 61. 10s. per fm.; in the back of the level there are four men working at 6s. in 11., the lode is worth 132. per fm.; two men, at 7s. 6d. in 11., lode worth 71. per fm.; six men, at 8s. in 11., lode worth 91. per fm.; five men, at 10s. in 11., lode worth 61. per fm.; six men, at 12s. in 11., lode also worth 61. per fm. The 20 has been driven 8 fms., and is now 51 fms. east of the pressure shaft; the end is driving by four men, at 51. 10s. per fathom; the lode is 6 in. wide, producing occasional stones of tin; there is also a communication made from this level to the level above; in the back of this level we have four men employed at 5s. in 11., lode worth at the present time 121. per fm.; three men, at 6s. in 11., lode worth 71. per fm. The 10 east is now extended to East of the 40 fathom level, in the back of this level there are two men engaged at 5s. in 11., and the lode worth 121. per fm.; two men working by two men, at 13s. 4d. in 11.—Standard Lode: The 12 has been extended north to level of the shaft sunk 2 fms., and driven a short distance on the course of the lode, but it was so poor that it would not pay for working; all operations on this lode are, therefore, suspended.—Georgia Lode: At the deep adit, and 23 fm. level from surface, we have four men employed on tribute at 15s. in 11. In our tribute department the standard for black tin is 501. per ton, the tributers paying all expenses. We would remark that in the last three months we have driven and sunk in different levels 49 fms. of ground, and stoped by tributers and tutwormen 216 fms., making in the aggregate 265 fms.; this has produced 36 tons 7 cwt. 1 qr 7 lbs. of black tin, which sold for 1835s. 15s. 5d. The average price of black tin through the last quarter is 67. 18s. 6d. per ton, and 67. 18s. 6d. per fathom. There are employed in and on the mines 220 persons, and the dressing tin. As regards future prospects, we consider our returns will be about 12 to 13 tons of black tin a month, and a monthly cost about 6207.—EDWARD ROGERS, EDMUND ROGERS.

THE CHAIRMAN having proposed that the report should be received and entered on the minutes, and that the accounts be passed and allowed, stated that it would be within the recollection of the shareholders that at the last meeting the solicitor was instructed to defend an action which had been brought against the company for the death of a cow, alleged to have been caused by the arsenic fumes emitted from the burning-house upon the mine. The damages were laid at 1000*l*. This was one of the most important cases that had occurred in Cornwall for many years; and, moreover, it was a question in which the whole of the shareholders in the tin mines of Cornwall were directly concerned. As the cow, it is well known, is a tenant, the terms of the lease "to erect a stove, and make a combustible ore raised from the bowels of the earth, and, of course, to pay dues thereon, and yet if an action be brought by a tenant, even though he rented land possessed by the same lord, for the alleged damages resulting from the process which the shareholders were perforce obliged to perform under the covenants of their lease, the shareholders were, *notens volens*, placed in the position of defendants. The peculiarities of this action were these—the cow, which had been ill for some time, was brought from the rich pasture lands of Jersey to some of the poorest ground in Cornwall, as indicated by its name, "Cro' d'ell"; therefore, it would be singular if, under those circumstances, it should be well. It was so, and the action was, of course, refused to be defended, a compromise was offered by the plaintiff, a Mr. Kito, which the company refused to entertain, upon the ground that if they had done so they would at once lay themselves open to other similar allegations. Upon the trial they had the evidence of the largest farmer in the neighbourhood, that neither his cattle nor his land had in any way suffered from the effects of the burning-house; but, from the 20 witnesses examined, the evidence was very conflicting. The defence was this—that, although the cow had been ill for some time, the attention of the agent (Capt. Rogers) was never drawn to the fact that the cow was ill, and that, as it appeared, the cow was poisoned, and that the plaintiff could have done was to have had it opened, and the arsenic got out in the presence of Capt. Rogers. But what did the plaintiff do? Why, after having embedded the stomach in the earth for some considerable time he took it up, and at last sent it to Mr. Herapath, of Bristol, to be analysed. Now, he (the Chairman) would ask who could say that the stomach was not tampered with in the long interim that took place between the death of the cow and the time the stomach reached Mr. Herapath. The report made by Mr. Herapath was that there were certainly traces of arsenic in the stomach. The trial lasted 30 days, and the conclusion the jury were locked up in for some hours, was, and I need not repeat, in favour of the plaintiff. The costs were 100*l*. Having read the report of the solicitor (Mr. Tunnell Southgate) upon the case, he (the Chairman) proceeded to say that, although he was in Cornwall fully one week about the matter, he had not himself charged the company any expenses, not even those incurred in travelling. Now, although it was true the plaintiff had got 2*l*., and saved his costs, yet there could be no question that not the least difficulty would be found in reversing the decision in a superior court; but, be that as it may, if mine adventurers were not to be protected by the lords from such actions as those brought about by their tenants, the sooner the tin mine will be shut up the better. (Hear, hear.) And, in this, the fact that such an effect had been produced by the proceedings against any gain in mine would not be again commenced, but he thought those explanations were necessary to point out to the shareholders the cause of the increased expenditure occasioned by this suit, as stated in the accounts.

Capt. ROGERS, in reply to a question, stated that he had given instructions for a stream of water to be turned into the flue of the burning-house, which would have the desired effect.—Mr. T. KING thought, as the whole of the tin mines in Cornwall would benefit by this action, that they should contribute their proportion of the costs.

The CHAIRMAN, advising to the position and progress of the operations at the mine, stated that Capt. Rogers, at the last meeting, computed that he would be able to return 36 tons of tin during the quarter, which computation had been fully realised. The loss, however, during that period had amounted to £222, but in that loss there were included certain expenses occasioned by the paying of witnesses from the mine. The costs, too,

during July was unreasonably swelled by paying the tributers a great deal too much for their work, arising either from the samples having been "prilled," or the assayer having assayed the samples too high. The committee thoroughly investigated the matter, which, suffice it to say, resulted in the services of the assayer being dispensed with. Since which an experienced assayer (recommended by Capt. C. Thomas and Capt. Pascoe) had been engaged—in fact, he had been employed at Dolcoath and South Frances. Had it not been for the particulars to which he had just referred, the loss during the quarter would not have exceeded 200*l*. As regards the prospects of the mine, they were fully set forth in the report of the committee, to which it is only necessary to add that there were several reasons to be believed within a few months from the present to be able to raise 400,000*l*. Capt. Robbins, pointing out the different works, stated that in the 40 in the new ground there would be soon laid open something like 150 tons of tin ground. He estimated that the costs would, during the current quarter, be met by the returns.

Mr. FURMSTON (the largest shareholder) looked forward with great interest to the reaching the tin ground near pressure shaft, which, it was believed, would be done in about three months.

Mr. E. COOKS said there could be no question it was a most important point to reach. Mr. FURMSTON said the mine at present was dependent upon three levels—the 10, 20 and 30; and, if they could get the 30 and the 40 into the rich ground, there would be no difficulty in at once making the return air. Mr. COOKS said that Whelan Grylls was a very shallow mine for the time being, but that it had been raised to the level of the 30 from surface. Mr. FURMSTON said if things continued even as at the present time they could not make much loss; but if things improved, as he strongly believed they would, profit, and very good ones too, would be made. He reminded his fellow-shareholders that Whelan Grylls was a very shallow mine, and that the only way in which the mine could be made more was likely to considerably improve, that the number of shares should be increased,

elvan for progress, as the small part of the lode carried contains some native copper, and gray copper ore occasionally. The part of the lode now being cut into in the No. 5 cross-cut, in the 162 west, is improved during the past week, being composed of capel, more kindly quartz, fluor-spar, prairie, peach, mandle, and good stones of yellow copper ore. The lode in the stopes in the back of the 162 west yields 181. worth of ore per fm. The capel is not very good, but the cross-cut contains some small floors of gossan, in the present end intermixed with red oxide of copper, which is a good feature. The 174 west has been extended 33 ft. during the past month, and the ground in the present end is good for progress, being elvan strongly mineralised.

WHEAL AGAR.—W. Roberts, Oct. 25: The lode in the 110 east is 3 ft. wide, yielding a little tin. In the 110 west the lode is 1 ft. wide, producing stones of ore occasionally. In the winze sinking under the 100, east of shaft, the lode is 2 ft. wide, composed of spar, mandle, and stones of good ore. In the 90 east the lode is 2½ ft. wide, producing stones of ore.—**Western Shaft:** In the 100 east lode 1 ft. wide, composed of mandle, and stones of good ore. The winze sinking under the 70, east of shaft, the lode is 1½ ft. wide, chiefly blende mandle, and stones of good ore.—**Old Wain-shaft:** In the 100 east the lode is 2 ft. wide, producing good stones of ore and of tin occasionally. In the 120 east the lode is 2½ ft. wide, saving work for them. We have sampled, to-day (computed) 9 tons of ore.

WHEAL CREIDOR.—J. Gifford, Oct. 23: On Saturday last the following bargains and pitches were set:—The 108 east to drive by the side of the lode, by four men, sent 3 fms., at 97 per fm. The 108 west to drive north on the cross-course, by six men; sent 3 fms., or cut the lode, at 31, per fm. The rise in the back of the 96 west, against the cross-course, by six men—sent 2 fms., or hauled, at 13. 15. per fm. The cross-cut south, in the 96 west, by four men—sent the month, at 15. 15. per fm. The 84 east, by six men, to carry all the lode—sent 2 fms., at 37, per fm. 1 lode 2 ft. wide, worth 82, per fm. The 84 east to drive by six men—sent 3 fms., and to carry all the lode, at 37. 10. per fm.; 1 lode 2½ ft. wide, yielding occasional stones of copper ore, and kindly. The 48 east to drive by two men—sent 2 fms., at 21. 15s. per fm.; we intend continuing this drive the month out, when if no improvement I shall suspend it. A pitch below the 96 west, by two men, at 12s. in 11. A pitch in the back of the 96 east and two months, by two men, at 10s. in 11. A pitch in the back of the 84, east and west of Waverley mine, by two men, at 7s. 6d. in 11. A pitch in the back of the 72 east, by three men, for one or two months, at 12s. 6d. in 11. Our sampling will be all sent off the mine to-day.

WHEAL EDWARD.—G. Rowe, Oct. 21: The lode in the 61 west is 20 inches wide, producing spar, mandle, and ore of good quality.

WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Oct. 21: The lode in the 120 west is 2½ ft. wide, and producing low stamping work. The lode in the 110 west is 4 ft. wide, worth 121. per fm. The lode in the three stopes above this level is worth 77, 67, and 81. per fm. The lode in the 100 east is getting larger, and producing a little tin, but not very good. The lode in the winze sinking below this level is worth 81. per fathom. The stope above this level are worth 91, and 81, per fm. The lode in the 100 west is 2½ ft. wide, and yielding stamping work. The lode in the stope above this level is worth 67, per fm. The lode in the 90 east is 2 ft. wide, worth 81. per fm. The lode in the stope above this level is worth 91. per fm. The lode in the 90 west is 2½ ft. wide, worth 77. per fm. The stope above the 80 are yielding about the same quantity of tinstuff, and they are of much the same value—101, 91, 91, and 71. per fm. We have holed the rise above the 66 with the 44, and which has consequently opened out a piece of stopping ground. The lode in the 66 west is split into branches. The lode in the stope above this level is worth 91. per fm. The lode in the winze sinking below this level is worth 81. per fm. The lode in the 54 west is 18 in. wide, and yielding a little tin, and will sell a good parcel of tin again on Wednesday. The lode in the boundary shaft is from 15 to 18 in. wide, of quartz and gossan, with occasionally good stones of ore—a very kindly lode, and the granite by the side of it also looks congenial.

WHEAL HARRIETT.—S. Williams, Oct. 21: The lode in the 130 west end, from east cross-cut, is producing stones of tin. The rise above the 115 is worth for copper ore 101. per fm. The stope above the 115 is worth for copper ore 77. per fm. The lode in the 90 east end, from cross-cut, is producing stones of copper ore. The lode in the 90 west end is 18 in. wide, and yielding a little tin, and will sell a good parcel of tin again on Wednesday. The lode in the 54 west is 18 in. wide, and yielding a little tin, and will sell a good parcel of tin again on Wednesday. The lode in the boundary shaft is from 15 to 18 in. wide, of quartz and gossan, with occasionally good stones of ore—a very kindly lode, and the granite by the side of it also looks congenial.

WHEAL KATY.—S. Williams, Oct. 21: The lode in the 130 west end, from east cross-cut, is producing stones of tin. The rise above the 115 is worth for copper ore 101. per fm. The stope above the 115 is worth for copper ore 77. per fm. The lode in the 90 east end, from cross-cut, is producing stones of copper ore. The lode in the 90 west end is 18 in. wide, and yielding a little tin, and will sell a good parcel of tin again on Wednesday. The lode in the 54 west is 18 in. wide, and yielding a little tin, and will sell a good parcel of tin again on Wednesday. The lode in the boundary shaft is from 15 to 18 in. wide, of quartz and gossan, with occasionally good stones of ore—a very kindly lode, and the granite by the side of it also looks congenial.

WHEAL KATY (St. Agnes).—Wm. Polkinghorne, S. Davey, Oct. 21: In the 62, driving west of Holgate's shaft, the lode is worth for tin 61. per fm.—**Fryer's Lode:** The lode in new shaft, sinking below the 65, is still worth for tin 701. per fm. for length of shaft, 10 ft. In the 65, driving west of shaft, the lode is becoming larger, and showing a better appearance, worth for tin 101. per fm. No change worthy of notice has taken place in the 65, east of shaft, since last week. In the 84, driving west of shaft, the lode is worth for tin 101. per fm. In the 84, driving east of shaft, the lode is 1½ ft. wide, worth 77. per fm. In the 84, driving west of shaft, the lode is worth for tin 77. per fm. In the 84, driving east of shaft, the lode is worth for tin 77. per fm. There is no change in either of the cross-cuts or any other point worthy of remark.

WHEAL KATY (Lelant).—W. Williams, Oct. 26: The lode in the winze sinking below the 140 is worth 71. per fm.; sinking at 31. 10s. per fathom. The rise above the 140 is holed to the 130, and has opened out a good piece of tin ground. The stope in the back of the 140 is worth 41. per fm.; stopping at 23s. 6d. per fathom. In the 130 end, west of Bolitho's rise, the lode is split, and at present not of much value. There are two stopes in the back, worth 177. and 41. per fathom respectively; stopping at 33s. 6d. per fathom. The lode in the 130 end, west of Bolitho's rise, is 2 ft. wide, worth 81. per fm. The lode in the 120 end, west is worth 41. per fathom; driving at 10s. per fathom. The lode in the 120 end, east is worth 41. per fathom; driving at 31. per fathom. The stope in the back is worth 61. per fathom; stopping at 32s. 6d. per fathom. The lode in the 110 end, west is worth 21. per fathom; driving at 31. 10s. per fathom. In Bolitho's rise, above the 110 fm. level, the lode is small. There is no change to notices in the 140 cross-cut, driving south of the North Russos lode. In the 90 cross-cut, driving south of the Gowan lode, we have intersected a branch 9 inches wide; we intend to open a little on it to prove its value. There is no change to notice in Philip's shaft, sinking below the 40 level, the lode is 2½ ft. wide, worth 81. per fm. The pitches are yielding about the same quantity of tin as for some months past.

WHEAL MARGERY.—R. James, Wm. Rogers, Oct. 26: We have no change in the several township points of operation; the tribute is looking fair. We sampled on Tuesday last (computed) 353 tons of copper ore, and set our tribute for the next two months; and, from present appearances, we expect a fair sampling.

WHEAL MARY ANN.—F. Clymo, J. Harris, J. Stevens, Oct. 26: Clymo's shaft is sunk 5 fms. under the 210. The cross-cut at this level is extended 4 fms. towards the lode. In the 200 north the lode is 2½ ft. wide, producing stones of lead; in the same level south the lode is 2½ ft. wide, worth 81. per fm. In the 190 north the lode is 2½ ft. wide, worth 81. per fm. In the 180 north the lode is 2 ft. wide, worth 41. per fm.; in the same level south the lode is small, and at present disordered under the influence of an slide. There is no change to notice in the 170, north of Poliard's shaft. The stopes and pitches are producing much the same as they have for some time past. We sold on the 16th inst. two parcels of lead ore—No. 1, computed 64 tons, to Messrs. The Barry Port Smelting Company, at 24s. 5s. per ton; and No. 2, computed 20 tons, to ditto, at 17. 5s. per ton.

WHEAL NORRIS.—John Andrews, Oct. 22: The brunger lately fixed at Carter's shaft, 40 ft. deep, and the ladder-rod, solars, shaft-fores, &c., nearly completed, so that the shaftmen will shortly resume sinking below the 57. The lode in the 57 east is not looking quite so well as when last reported on; now 18 in. wide, worth from 101. to 121. per fathom. The last pile of tinstuff sampled from this end produced 1 ewt. 2 qrs. 4 lbs. of black tin to the ton of stuff. We have holed the rise in back of the 57 to the 45, which has given thorough ventilation, so that the tributers will be able to commence working at once. The lode in the stope in back of the 45 is 2 ft. wide, worth 61. per fathom. The new lode in the 45 end, driving east of cross-cut, is 2 ft. wide, worth for tin 101. per fathom. In the 45 end, driving east of cross-cut, the lode is 2 ft. wide, worth for tin 101. per fathom. The lode in the 45 end, driving east of cross-cut, the lode is 2 ft. wide, worth for tin 101. per fathom.

WHEAL SPARKON.—W. Tregay, E. Chegwain, Oct. 21: Sump: The bottom level, which we found completely filled with sand and slime, has been cleared during the month 70 fms. 1 ft.; the lode all along this back produces tin, and much of it will be worked by tributers; as it is of the highest importance to get through this clearing a quickly as possible, we have taken the men from all the drives for the present to facilitate this clearing, having set the level east of sump-shaft to clear by 20 men, at 20s. per fathom, and having set the level west of sump-shaft to clear by 12 men, at 20s. per fathom. North Lode: In the 20 north the lode has been slightly produced throughout the month 30 fms. 4 in. The new lode has produced good stones of copper ore, and we believe that on getting above the elvan we shall have a productive lode; ground risen 2 ft. 6 in. There has been nothing of notice intersected in the 20 north cross-cut for the month; ground driven 2 fms. 1 ft. 10 in. The cobalt lode, in the bottom of Bolphy's shaft, is principally quartz, with a little mandle; ground sunk 1 fm. 1 ft. The 45 south has been cleared in the month 10 fms. 1 ft. 3 in. The lode in the 50 east produces mandle and stones of copper ore—a very kindly lode; ground driven 2 fms. 3 ft. —**Old Sump-shaft:** There has been nothing of notice intersected in the 20 north cross-cut for the month; ground driven 2 fms. 3 ft. —**Old Sump-shaft:** There has been nothing of notice intersected in the 20 north cross-cut for the month; ground driven 2 fms. 3 ft. —**Old Sump-shaft:** There has been nothing of notice intersected in the 20 north cross-cut for the month; ground driven 2 fms. 3 ft.

WHEAL TRELAWNY

50 north, on Susan's lode, is unproductive; the same level, on the eastern part, is looking kindly, and produces stones of lead ore and blende. The 30 north, on the same lode, is unproductive. The 8, north and south of No. 3 cross cut, on No. 3 lode is poor. The tribute pitches are a little better in the yield. Surface: The engine and boiler-house at La Broue are in a forward state, and all goes on well the walls will be up for roofing in eight or ten days. We have yet a short supply of water for our lavatories; at Rosier we are lifting it to work over again, so that there is scarcely any for La Broue; but the weather is changing, and we hope soon to have a better supply. At La Grange we have set the engine to work to pump and drain, which will enable us to resume Nosky's shaft below the 40.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

Business in the Cornish Mine Share Market. We regret to say, still of a restricted character, but the steadily increasing price of copper, together with the firm and upward tendency of tin, will, it is thought, soon produce beneficial results to all parties connected with this important branch of commerce. East Lovell, Transvaal, East and Wheel Grylls, Clifford, Great Vor, Tincroft, and Rosewarne United, are the investments. West Great Work, Wheel Harriet, and Camborne Vean have improved in appearance. The general meeting of shareholders in the last-named mine will take place on Wednesday next.—ALBERT E. PRINCE: Camborne, Oct. 28.

GREAT WHEEL VOR.—Wheel Metal: The prospects continue to be very favourable. The 154, west of Metal, is improved. The 174, also west of Metal, holds on well, and the bottom of Ivey's is looking remarkably well. The returns continue undiminished, and reserves still accumulating.

TIN MINES AS AN INVESTMENT.—It may be well to remind shareholders and investors in tin mines that, before the American war broke out, black tin was selling for about 85s. to 87s. per ton—now it is at about 55s. per ton. The Americans are now buying largely, and a rise of 15s. to 20s. may take place in the price of tin in a comparatively very short period. Investors, therefore, cannot go wrong in now buying largely into good tin mines, which are now about paying their way, and with the improved prices of tin, must soon enter the dividend list.

At New Wheel Martha a change in the management has taken place, by the appointment of Capt. R. Pryor as manager, and Mr. B. Scammell as purser, in the room of Capt. H. Rickard, resigned.

CARGOLL.—The 120 south continues very good. The north stopes are producing more jack. Other parts as last reported. They sampled, for sale to-morrow, 79 tons of lead ore.

PENHALLOW MOOR.—The first lode has been intersected in the 27 fm. level, and is 20 in. wide, composed of flookan, soft spar, munda, and fine lead ore. The appearance of the lode has very much improved to what it was in the edit, and the agents have no doubt when driven on north and south on its course it will prove rich for lead ore. The main lode will probably be cut in about three weeks.

ROSEWARNE CONSOLS is rapidly improving in the deeper levels. As the great body of ore is all dipping west, it is expected to cut it at Eilan's shaft in the 100 or next level. There is now little doubt of its becoming a mine of immense wealth and richness in a few months. The new management has given increased confidence.

WHEEL MARY HUTCHINGS.—It is gratifying to find this mine is opening up so rich, the driving on the course of the lode in the deep edit level being extended between 30 and 40 fms., which is through a very rich course of tin, and in a most splendid channel of ground, the average driving throughout being under 30s. per fm.

At Great South Chiverton all the workings are being pushed forward vigorously without let or hindrance. The engine works well, and a good supply of coal is being delivered on the mine, in order to carry on the sinking of the engine-shaft day and night during the winter months.

IRISH MINES.—We have just received intelligence that a rich lode, from 19 to 18 in. thick, has been cut in the Ballycummick Mines, in the county of Cork, this week. This mine has been considerably improving for the last two years, and is now sending considerable quantities of ore to market of a high standard. The Cap-pagh and Roaring Water Mines are upon the same vein, and are giving strong indications of results of the same character. At Roaring Water Mine the water-wheel and machinery are nearly complete, when the two shafts will be sunk simultaneously; and at Grady's shaft, which is sunk upon the course of the lode, rich ore will be raised, and as they approach the junction of the north and south lodes a valuable course of ore may be expected at about 40 fathoms.

TOLVADDER MINE is rapidly improving, and will, in all probability, create fresh excitement in the mining circles. They have just sampled 218 barrows of tin ore, and 50 tons of rich copper ore of a better quality than the previous sale, and the future samplings are likely to be considerably increased, from the fact that several new tribute pitches are being set to anxious tributors, who are calculating upon getting good wages, especially with the advance in the price for tin and copper.

EAST WHEEL LOVELL never looked so well as at present, not even when the shares were at 23s. to 24s. each. A large parcel of tin is now being prepared, and as the price of tin has gone up 6s. per ton, and likely soon to go up 10s. per ton more, this must favourably affect this, and indeed all tin mines selling large quantities.

The GREAT MONA MINE is surpassing the most sanguine anticipations of all connected with it: the driving on the No. 1 level is being prosecuted with great vigour, and is producing splendid copper ore. No. 2 level is also producing rich lead and copper ore. The mine has just been inspected by Capt. John Killo, late manager of the Great Laxey Mine, whose report is highly satisfactory, and will shortly be published.

GOLD IN SOUTH WALES.—The satisfactory intelligence has been received by Mr. W. H. Davis, of T-y-Gwynne, that his miners had cut a lode in the fore-bread of the south level, the stones from which contain visible gold. A short time since a copper lode was cut in the same level. The gold discovery, which is regarded as the first in South Wales, caused great rejoicing among the miners and neighbouring villages.

NORTH GRILLS.—This sett, which is now being worked by a cost-book company in 4096 shares, adjoins the western boundary of the rich old tin mine Great Work, and having the same lodes, which are almost entirely unwrought in this property. The lode now being operated upon varies in size from 4 to 10 ft. wide, and is already yielding more tin for the depth (considering the number of men employed) than any other lode in the district. The lode enters the granite on Trengon Hill at the same angle as the Great Wheel Vor and Wheel Metal lodes on the other side, and has proved the case in the latter mines, it is confidently expected by the most experienced miners who have made an inspection that from the junction backwards in the hills similar deposits of mineral will be found.—INSPECTOR.

ROSEWARNE AND PANT-Y-GO MINES.—These mines have during the past few days changed hands. They have been purchased by a limited company of Liverpool gentlemen for 125,000l.—Rosewarne 98,000l., Pant-y-Go 27,000l.

WHEEL BULLER.—The improvements in this mine are of a very satisfactory character. The writer visited it a few days since, and the following facts may be fully relied on:—The tin ore cannot be taken away nearly so fast as discovered, because of the new dressing apparatus being incomplete. The new revolving boulders in course of erection are constructed on the newest and most approved principle, and will save a great amount of labour cost; they will be in operation by the middle of Nov., when a large increase in the returns may be looked for. The shaft is now complete, and machinery erected on it, at a cost of about 3000l.; by means of the shaft, which has been working about a month, a large quantity of copper ore will be raised which before could not be touched; at least 3000l. worth has already been brought to surface, which, however, will not be sold in time to come into the next account. The change in the mine from copper to tin has involved a large outlay, but the whole cost, it is believed, will be paid without any call whatever, and there is every reason to hope that this mine, which was so rich for copper as to make the shares marketable at 2000s. each, will be equally rich for tin when fully developed. The manager states that there is no falling back in the mine, except perhaps for a few days now and then; but a gradual progressive improvement is distinctly observable.

LISSKARD MINING SHARE MARKET.—During the past week the amount of business transacted has been of a very limited character, and in most instances shares have been offered at lower rates, notwithstanding the steady rise of late in the standard, and another advance of 5s. on copper, with every prospect of a further advance on other metals. The following shares have maintained their price, and are firm at quotations:—CLIFFORD, 20s.; HERODSFORD, 30s.; NORTH TREKERRY, 31s. 6s.; TRELAUNY, 18s. 10s.; WEST CARADON, 11s. 15s.; and WEST CHIVERTON, 7s. 10s.

MINE ACCIDENT.—At Wheel Jane, on Monday, two men were burnt and bruised by the premature explosion of a hole whilst tamping.

LEAD MINING IN SHROPSHIRE.—The celebrated Whit Grit Lead Mines are in the market, not in consequence of any deficiency of mineral in the mines, but owing to the insufficiency of capital at the disposal of the present proprietors. The sett in the immediate vicinity of the celebrated Roman Gravel Mine, which has long maintained an enviable position in the list of lead ore, and it appears that a company prepared to spend 20,000l. upon the underground operations can place themselves in possession of a good and lasting mine. A detailed description of the Whit Grit sett, and a full exposition of its prospects, is published in another column of this day's Journal.

THE SURGEONSHIP OF MINERS.—At Cook's Kitchen Mine meeting, on Thursday, the question as to the surgeonship of mines was again opened by Major Bickford, who proposed that the miners employed be in future allowed to make choice of the doctor, instead of being obliged to subscribe their money, and have forced on them any surgeon that the adventurers might appoint. Messrs. Hutchinson and Vincent made a few remarks with the view of getting some adventurers to move an amendment, and the Chairman gave every opportunity, but the adventurers present were so unanimous in considering Major Bickford's proposition to be the best for the miners, that no motion of the kind was made, and it was carried without a dissenting voice. The principle on which it is managed is this. Every miner on engaging to work in the mine will state who his doctor shall be in case of sickness or injury, and that doctor will get his 6d. per month. If at any time he (the miner) should wish to change his doctor, he is at liberty to do so on his pay-day. Under this system medical men's success will depend on their popularity and ability; and every medical gentleman will have a chance of making a position, the same as in agricultural and town districts. This principle has been advocated for many years past, and is now adopted in North Roakear and Camborne Vean, as well as in Cook's Kitchen.

OTEA COPPER MINE.—Last week we drew attention to this valuable property, and since then we have received the following letter, in further confirmation of our remarks:—"Horbridge, Devon, Oct. 17, 1865.—Dear Sir: I was in Mr. James Atwell's company a short time ago, who was lately from New Zealand and Australia. He gave me a very favourable account of the Otea Mine. He says there are no mines in this country like them, and not many in Australia that would surpass them, that he had seen. He has left again for Australia. A large quantity of ore is already discovered—enough, it is believed, to give a profit equal to 30s. per share, so that the shares must be cheap if they can be bought at that price; for there is every indication that larger and more valuable discoveries will yet be made. There are only 15,000 shares (5000 of which are held by the Great Barrier Company), of 2s. each, and 1½d. paid.

•• The MINING JOURNAL is published in time for dispatch by the early mails on Saturday, and should be delivered with the usual morning papers of that day. In cases of irregularity, we recommend that orders be given to Messrs. Smith, or other active agents, who will readily undertake to supply it.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, Oct. 27, 1865.

COPPER.		S. & S. & S.		BRASS.		PER LB.	
Best selected	99 0 0	0 0	0 0	Sheets	100-110	100-110	0 0
Tough cake & tile	98 0 0	0 0	0 0	Wire	104-104 1/2	104-104 1/2	0 0
Burma	96 0 0	0 0	0 0	Tubes	104-110 1/2	104-110 1/2	0 0
Copper wire	10 1/2	0 0	0 0				
ditto tubes	10 1/2	0 0	0 0				
Sheeting & bolts	10 1/2	0 0	0 0				
Bottoms	10 1/2	0 0	0 0				
Old (Exchange)	57 0 0	0 0	0 0				
IRON.		PER TON.		STEEL.		PER TON.	
Bars Welsh, in London	7 1/2	0 0	0 0	Swedish, in kegs (rolled)	15	0 0	0 0
ditto, to arrive	7 1/2	0 0	0 0	(hammered)	15	0 0	0 0
Nail rods	8 1/2	0 0	0 0	ditto in faggots	16	0 0	0 0
St. Stafford, in London	8 1/2	0 0	0 0	English, Spring	18	0 0	0 0
Bars ditto	8 1/2	0 0	0 0	QUICKSILVER (per bottle)	8	0 0	0 0
Hoops ditto	9 1/2	0 0	0 0				
Sheet, single	10 1/2	0 0	0 0				
Pig No. 1, in Wales	4 1/2	0 0	0 0				
Refined metal, ditto	4 1/2	0 0	0 0				
Bars, common, ditto	7 1/2	0 0	0 0				
Do, merch., Tynor Ties	7 1/2	0 0	0 0				
ditto, railway, in Wales	7 1/2	0 0	0 0				
ditto Swed. in London	11 0	0 0	0 0				
ditto, No. 1, in Clydeside	2 1/2	0 0	0 0				
ditto, No. 2, in Clydeside	2 1/2	0 0	0 0				
ditto, No. 3, 4, 5, 6, 7, 8, 9, 10	2 1/2	0 0	0 0				
Railway chairs	11 0	0 0	0 0				
spikes	11 0	0 0	0 0				
LEAD.		PER TON.		SILVER.		PER TON.	
English Pig, ordy, soft	21 0 0	0 0	0 0	Foreign	21 0 0	0 0	0 0
ditto (WB)	21 0 0	0 0	0 0	To arrive	21 0 0	0 0	0 0
ditto sheet	20 10 0	0 0	0 0				
ditto rod	20 10 0	0 0	0 0				
ditto white	20 10 0	0 0	0 0				
ditto patent shot	20 10 0	0 0	0 0				
Spanish	19 0 0	0 0	0 0				

At the works, 1s. to 1s. 6d. per cwt. less.

REMARKS.—The Metal Market continues to progress very favourably, and business is now becoming in a much more satisfactory state than it has been for many months past. The high rate of discount does not appear to have acted prejudicially upon the metal trade; and such has been lately the very low price at which most metals have stood, that the tightness of the money market has not altogether prevented speculation, while it has not at all interfered with regular and legitimate business. Now, however (as was intimated in the last report in the *Mining Journal*), prices are making a decided movement upwards; and this week, again, further advances have been made in the prices of several metals, and the market generally is still looking very firm and healthy, with an upward tendency. The trade with the United States is improving very considerably, and orders are now constantly arriving. Under all circumstances, we are justified in anticipating ere long a complete revival in the metal trade; and have little doubt that business will soon become very active and vigorous.

COPPER.—On Wednesday, the smelters again announced a further advance of 5s. per ton, making present prices 95s. for best selected; 96s. for tough cake, tile, and ingot; and 101s. for manufactured. The market continues to look very well. This movement has caused the market for colonial and foreign to become unsettled, and made prices very uncertain.

YELLOW METAL.—A further advance of 1d. per lb. has been made at the same time as copper, making the present price 94d. per lb.

IRON.—In Staffordshire there is a steady continuance of the improvement previously noticed, which the high rate of discount has not checked. Prices are better maintained, which is promoted by the greater firmness in the quotations of Welsh iron. In Welsh the trade is still active, and there is no want of employment at the works. No contracts of importance have been accepted during the last few weeks; not, however, because no orders were offering, but owing to the fact that the principal makers were so well placed previously that they did not care about entering into fresh transactions for the present. The firmness which has been evinced as regards prices for the last three weeks is not only maintained, but there is an undoubted tendency to further improvement. The enquiries for America are more numerous than the actual sales, but confidence in the future of the trade with that country remains undiminished, and there is no doubt that in a few months South Wales will be shipping large quantities of iron to the States. In the continental and South American demand there is no change to report; and home buyers are giving out specifications freely. The exports for the week ending the 19th inst., reached 1725 tons. In Swedish iron the market remains without change. In Scotch pig-iron, at the commencement of the week a very considerable business was done at advanced prices, warrants having changed hands at 59s. cash, and 59s. 4½d. one month; but latterly the market has very much flattened, and business took place at 58s. 1½d. cash, and 58s. 6d. one month; at the last advices from Glasgow, however, an improvement had occurred to 58s. 3d. cash.

LEAD.—The market has become very firm, and prices have again advanced; they may be now quoted at 20s. 10s. for common English pig, 21s. for LB, and 21s. 6s. to 21s. 10s. for WB.

TIN.—On Thursday, the smelters of English announced an advance of 3s. per ton, making present prices 97s. for blocks, 98s. for bars, and 100s. for refined. In consequence of this rise, Straits has also advanced in price 1s. per ton, and business has been done at 93s. cash, while holders are now asking 94s. cash, and for arrival 95s. has been paid, while 96s. is now asked. Banca may now be quoted at 95s. to 96s.

SPELTER.—The market is looking decidedly better, and prices have considerably advanced; business has been done at 21s. 5s. on the spot, but holders will not now sell under 21s. 10s., which may, therefore, be considered the quotation.

TIN-PLATES.—The works are in full time, and buyers are exceedingly pressing for the immediate execution of their orders.

STEEL is in rather better demand. **QUICKSILVER** without change.

THE IRON TRADE.—[GRIFFITHS'S BI-WEEKLY REPORT.]

WOLVERHAMPTON, Oct. 28.—The meeting here yesterday was thinly attended, and the business done in all kinds was insignificant. The attendance at the Birmingham Exchange to-day was not up to the usual average. The market was by no means animated, and assumed a quieter tone than of late. The absence, however, of South Welsh and North Staffordshire competition in this market gives an advantage to the makers of small rounds and squares, which renders ample orders for this class of makers, who are invariably busy. The pig market is quieter, with only a moderate business doing; nevertheless, all the makers continue firm at our quotations.

BIRMINGHAM, Oct. 27.—Rylands' "Iron Trade Circular" reports—Trade since our last has been quiet, and not much done; nevertheless, the works are well off for orders, and both pigs and manufactured iron are firm at former quotations. The full subscription has been completed for the South Staffordshire and London Independent Railway, and it has been placed in a position to come before Parliament by the almost unanimous support of the district.

Very little change has taken place in the MINING SHARE MARKET since our last, but a fair average amount of business has been transacted. The standard for ore has risen 4s., copper is up 5s. per ton, and as Chili, from whence we derive such a large supply—to the injury of the home miner—is said to be blockaded, we may look for a still further, if not an important, rise in copper. Tin also, it is reported, has gone up 3s. per ton this week, and is likely to advance again soon, as the stocks in hand are said to be very low, and the demand good; indeed, there is a very strong feeling gaining ground among miners that the price now given by the smelters is not a fair one, and arrangements are talked of for withdrawing large quantities from the market unless a better price is obtained. Before the American war tin, for which 55s. per ton is now paid, was at 80s. per ton—a price, it is considered, that it ought to reach again. The Stock and Mining Exchanges are both closed to-day (Friday), in consequence of the funeral of the late lamented Lord Palmerston, and our quotations are only up to 4 o'clock Thursday afternoon. Carn Camborne shares, 36s. to 38s.; Chiverton Moor, 5s. to 6s.; West Chiverton, 7s. to 7½; the 80, west of Burgess's shaft, is worth 50s. per fathom. Nos. 4 and 5, below the 80, are worth 50s. per fathom each. The 90, west of Hawkes's, on Williams's lode, is worth 60s. per fm.; the 90, west of Valpy's, 60s. per fm.; the 90 east, 50s. per fm. In the 100 the cross-cut is pushing on to cut the lodes. Clifford Amalgamated, 19 to 20; Cook's Kitchen, 7½ to 8. Devon Great Consols, 56s. to 57s., and in demand; the rise in

copper will add at least 1000s. a month to the profits of these mines. East Basset, 19½ to 20½; East Caradon, 9 to 9½; East Carn Brea, 3½ to 3¾; at the meeting a call of 7s. 6d. per share was made. East Grenville shares have been in good demand, and leave off 3½ to 3¾; tin for this month realised 791s. 10s. 5d. East Grenville also in demand, and leave off 3½ to 3¾; the capels of the new lode, in the 75 cross-cut, 75 west has improved, worth 10s. per fathom; and the slope above this level is worth from 20s. to 25s. per fathom.

Wheal Buller, 21 to 23; the mine, according to the agent's report, looks as well as ever, and there are 24 pitches set at an average tribute of 8s. 2d. in 1s. to 59 men. Great Wheal Busy United, 4 to 4½; Great Laxey, 20½ to 21½; Great North Downs, 35s. to 37s. 6d.; Great Wheel Vor, 34½ to 35; Great Wheal Fortune, 4 to 5; Marke Valley, 2½ to 3; North Roakear, 9½ to 10; North Treskerby, 3½ to 4; Providence Mines, 35 to 37; South Condurrow, 2½ to 2¾; South Grenville, 6s. to 8s., and largely dealt in; Tincroft, 18 to 19. West Caradon, after making 12, leave off 10½ to 11½, without any change in the mine. West Selwyn, 17½ to 180; Wheal Basset, 7½ to 8½; Wheal Chiverton, 9 to 9½; Wheal Kitty (St. Agnes), 3½ to 4½; Wheal Rose, 22 to 23; Wheal Selwyn, 19 to 19½; Wheal Trelawny, 18 to 19. Rosewarne Consols, 1½ to 1½; at the meeting, on Wednesday, the accounts showed a balance against shareholders of 419s. 13s. 9d., and a call of 5s. per share was made. The report was considered satisfactory, and the prospects of the mine highly encouraging. The lode in the 70 east is worth 15s. per fm.; the slope, 12s., and the bottom ends improving. Wentworth has improved in the flat-rod shaft, sinking below the 15 fm. level.

Chontales shares are ½ to ½ prem.; a great many of those who applied for shares for investment have expressed their disappointment at receiving "letters of regret." So far as we can learn, however, the allotment was most fairly made; but it was found impossible to give shares to the late applicants, while many of the earliest had to be cut down from 100 to 10. The flatness of the market since the allotment letters have been out, is owing to the universal fact in all these matters, that those who apply merely for the sake of premiums offer their shares for sale, and buyers make lower quotations. When the first advices from the mines arrive it is considered shares will go to a high premium.

A very large business has been done during the week in foreign mine shares on the Stock Exchange, while home securities were comparatively neglected until near the close of the market on Thursday, when the announcement of the great rise in the copper standard at the weekly sale of ores in Cornwall, and the generally firm tone in the metal markets, caused a rather general enquiry to spring up, especially for Great Wheel Vor, Clifford, East Carn Brea, Chiverton, Great Wheal Busy, West Chiverton, and North Roakear. Cobres close at 23½ to 24½; the demand for these shares is consequent mainly on the enhanced price of copper, and also on a report that the waste ores at the mines (of which there is an immense quantity) has been experimented on at Glasgow, and found to contain cobalt, silver, and nickel, in commercially remunerative quantities. Cape Copper, 4½ to 4¾ prem.; flat; the yield of copper has fallen off considerably, and the reports from the mines are less favourable. St. John del Rey, 4 to 4½, and a firm market. Frontino and Bolivia, 1½ to 2 prem.; a large business has been done in the shares, purchasers have come forward freely, tempted by the late fall. Washoe Gold, 4 to 5 prem.; advices have been received from the agent sent out to report on the mine, the nature of which has not transpired on the market. Chontales, ½ to 1 prem.; the floating of the company has proved a great success, and shares are readily saleable at quotations. Don Pedro, ½ to ½ prem.; Panalco Copper, ½ to 1½ prem.; Anglo-Brazilian, 1-16 to 2-16 prem.; Calibak Fells, ½ to ½ prem.

The prosperous and continuously increasing business of the **CANNON FOUNDRY AND MOBILIER OF ENGLAND** has induced the directors to issue the remaining capital of the company—100,000 shares, on which 5s. is intended to be called up—one-half of such issue being reserved to the shareholders, who have the privilege of taking the shares at 2s. 10s. prem., and the remainder being offered to the public at 3s. 10s. prem. Of the character of the shares as an investment it is altogether unnecessary to speak, the single sentence in the prospectus—"The results of the company's operations have been so satisfactory that a dividend and bonus, up to September 30, at the rate of forty per cent. per annum, has been declared, being the same dividend and bonus as was paid for the previous half-year"—affording more conclusive evidence on the point than could be given by any estimate of probabilities.

The **CASHWELL LEAD MINING COMPANY** has been formed with a capital consisting of 6400 shares of 3s. each, for working certain lead mines situated on the Greenwhich Hospital estate at Alston, in Cumberland. From the prospectus, which will be found in another column, it will be seen that only 600 shares remained to be subscribed for; these are offered to the public as with 2s. 10s. paid at 1s. discount, upon condition of their being subscribed for within a month, after which it is considered they will command a premium. During the last five months lead ore to the extent of 200 tons has been raised, and the Cross Fell lode has been proved to the extent of one mile in length. There are satisfactory indications of opening up one of the most extensive and richest mines in the kingdom. The mines are at present making a fair profit.

The **VICTORIA SLATE COMPANY** have re-issued their prospectus. Of the 10,000 shares of 5s. each, into which the nominal capital is divided, about 3000 have been issued; and it is now proposed to issue 5000 more, retaining the balance (2000) for the purpose of offering them *pro rata* amongst the shareholders at a future time. The property is near Carradon-Suir, in Tipperary, and 1618 acres in extent, the purchase-money being 10,450s., all of which except 2000s. (half in cash and half in shares) will remain on mortgage at 4½ per cent.

At Redruth Ticketing, on Thursday, 2873 tons of ore were sold, realising 15,565s. 2s. The particulars of the sale were:—Average standard, 123s. 12s.; average produce, 6½; average price per ton, 5s. 8d.; quantity of fine copper, 189 tons 17 cwt. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Per cent.	Gravels.
Sept. 28.	3100	1114 7 0	6 1/2	5s. 8d.	14s. 5d.	23 1/2
Oct. 5.	3071	115 5 0	7 1/2	5 0	15 1/2	23 1/2
Oct. 12.	2109	117 11 0	6 1/2	5 0	15 1/2	23 1/2
Oct. 19.	4255	124 17 0	6 1/2	4 14 0	15 1/2	23 1/2
Oct. 26.	2873	123 12 0	6 1/2	5 8 0	16 1/2	23 1/2

Compared with last week's sale, the advance has been in the standard 3s., and in the price per ton of ore about 4s. Compared with the corresponding sale of last month, the advance has

by all booksellers and newsmen.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly reprinted so as to form an accumulating useful work of reference.

DOS COAL EXIST NEAR LONDON?—I have been anxiously expecting some further evidence to be given of the 9-ft. coal seam at Shoreham Harbour, the verification of whose existence would do much to induce searches for it elsewhere to be made. For my own part, I am not a believer in the southern coal field, but if your Shoreham cor-own part, I am not a believer in the southern coal field, but if your Shoreham cor-own part, I am not a believer in the southern coal field, but if your Shoreham cor-

respondent would send further particulars and samples of the coal I might be induced
to visit, or opinion, and become—AN INVESTOR.

MANUFACTURE OF STEEL AND IRON.—An improvement in the treatment of Bessemer metal has been patented by Mr. J. Ramsbottom, of the Railway Works at Crewe, in which the process to heat the air previously to admitting it into the converter is improved.

[illegible]

GOLD IN WALES—THE ST. DAVID'S RAILWAY.—In his report in the Journal of Saturday last Mr. Arthur Dean, reporting upon the Vigra and Clogau Mines, writes that all the heavy work will be completed by the end of the week, which I think must be an error for the end of the year, for I opine that he has got the heaviest part of the work—that from Fridd Liechfraith to the Vigra Bridge—untouched. Perhaps Mr. Dean does not plain his meaning through the Journal.—A SHAREHOLDER.

CALVADACK.—I should feel obliged if someone would inform me what has been the result of the winding-up of this mine, which transaction was to take place many months since. I have applied to the pursers (Messrs. Pike and Son) for information, but have received no reply.—Huo.

THE DALE AND THE ECTON MINES.—I have frequently heard the name of the Ecton Mine as being in proximity to and having many features in common with the Dale Mine, and as a mine yielding an extraordinary quantity of ore, but have never seen any attempt to estimate even an approximate quantity and value of such ore. Should such statistics be obtainable I, and I have no doubt my co-shareholders, would be very glad to see them appear in the columns of the Journal.—A SHAREHOLDER IN

WEGAL NEPTUNE AND TOLVADEN.—Will you allow me space to say that, as a shareholder in Tolvadden Mine, I think the suggestion of "Eastward Ho!," in last week's Journal, worthy the serious consideration of my fellow-shareholders.—A HOLDER OF SHARES, Coatictan, Abernethy, Oct. 23.

RELINQUISHMENT OF COST-BOOK SHARES.—You will oblige me by stating whether, under the Cost-book System, a shareholder having relinquished his shares, after having the mine valued, the company are compelled to pay him out before the mine is knocked?—R. A.—[It is usual upon relinquishment for the mine to be valued both on behalf of the shareholder and of the company. As soon as the valuation is made the proportion is paid either to or by the shareholder, as the case may be.]

CARN CAMBORNE.—Will you allow me through your valuable Journal to ask anyone of the shareholders in Carn Camborne Mine who attended the recent meeting at Salisbury if there was any opposition to the manager's determination to continue the down-right below the 50, instead of sinking on the course of the south lode now intersected 8 feet north of the shaft at that level? And to call the attention of the adventures, many of whom I know to be practical men, to the fact that an oblique shaft on this

course of ore would on the length of ground now opened (about 2 fm.), and according to present prospects, yield 12 tons of ore per fathom, besides hastening progress towards the important point which is likely to place this mine amongst the first in the Dividend List—that is, the anticipated junction of the north and south lodes at the 60. I consider the report furnished to the adventurers a measure indeed, and not conceivably adequately high, though the mine is not yet opened, and it would seem to be necessary to inspect it, if possible, and notice the turn the south lode has taken, falling into the granite, and its expansion in descending, before they think of selling at anything like present quotations.—FAIR PLAY.

CALDERICK FELLS CONSOLIDATED LEAD AND COPPER MINES (Cumberland).—In reply to "Spenstator," Capt. John Vercoe, late of Bodmin, and formerly manager of the Duke of Cornwall (copper), and East Jane (lead) Mines, is now resident manager of the above mine.—O. F.

GREAT WHEAL METAL.—"C. R. H." (Torquay).—The company being registered under the Companies Act, 1862, the whole of the information sought can be obtained direct from the office; whilst the introduction of allusions to one whose name "C. R. H." states "nowhere appeared in the prospectus" deprives us of any justification for inserting his letter. It is to be regretted that there should be cause of complaint that the agents' reports are not regularly published, and we trust this mention of it will

have the desired effect. A copy of the register, or any part of it, can be demanded under Clause 32 of the Act, and there are heavy penalties for refusal to supply it; the cost of the information would not exceed a few shillings, and would give the number of shares held by their directors. The accounts up to the last general meeting must be forwarded to the Registrar, and can be inspected for 1s. These must be verified before they are registered.

MINERAL RIGHTS.—Is clay for making fire-bricks, and clay which is suitable for making common bricks, classified as minerals?—JONES.—[Yes.]

IRISH MIXING.—Having read in the Journal of last and previous weeks remarks on the

mineral wealth of Ireland in the Journal of last and previous weeks remarks on the appearances that such rich mineral resources of the Trinity, Tassan, and Cooliarra Mines, but as you have mentioned that the silence which prevails the operations are unobserved, the mines is with a view to prevent undue speculation, and to render the undertaking more of an investment, is, no doubt, the correct solution of the privacy. This feature may in some measure be right, but it would be doing more justice to the interest of iron mining, and to the investing part of the public, to have minute details of all operations open to general investigation through the ordinary medium—the *Mining Journal*. Such a mode of procedure would be more likely to benefit shareholders, and whenever a right goes about could not in any way render the shares of mining companies speculative property.—*Investor: Glasgow, Oct. 24.*

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broke through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

LONDON, OCTOBER 28, 1865.

THE COPPER SMOKE QUESTION.

In connection with the utilisation of copper smoke there is one important point which has been to a great extent overlooked—the economising of the fuel by which that smoke is made; and in all the improvements which have been proposed no one has, until now, proposed to do more than make each calciner do its own work. Mr. ARTHUR BANKART, however, proposes so to arrange his calciners as to economise fuel, and at the same time extract every particle of copper or sulphur contained in the ore. To ensure the introduction of an invention, and to lead to reasonable hopes that such introduction will be attended with success, it is desirable that the inventor should be thoroughly acquainted with the processes at present in use, and that he should well have kept in view the utilisation, as far as possible, of existing constructions. An arrangement of calciners in patented by Mr. ARTHUR BANKART, of Braughing, Herts, who claims that he can purify the noxious gases in a simple manner after the sulphuric acid has been obtained, and that the coal smoke never touches the ore. One great recommendation of Mr. BANKART's process is that the ore does not require to be ground, but can be as easily calcined in the usual state by this method as by the ordinary one; it, therefore, does away with the necessity of having extra plant for grinding. Besides this, he remarks that with his arrangement one furnace heats completely three calciners; the block of nine calciners and boiler are heated by three furnaces; and he arranges for one man to attend to the three fires and boiler, and five men to the calciners, thus a saving of two-thirds of the consumption of fuel and half the labour is effected, which is a considerable item; and another advantage is that the workmen have nothing new to learn in this method of calcining over the ordinary one. Another advantage, not to be lost sight of, is that by this arrangement only half the number of walls is necessary; and, all the fires verging into one stack, a vast saving is effected in the first construction of the block; and the walls being of cast-iron, perforated —each wall in one or two pieces, as the case may be—it very materially lessens thereby the expense in repairing, as the walls have only to be lifted nearly, if not quite, as long as the brick linings of the present calciners, whilst the worn-out walls are readily saleable as old iron, as they never touch melted metal.

In describing his invention he states that a block of nine calciners and three furnaces, to be built coffin-shaped, as per engraving, with feet to centre, so that the flues shall be arranged in order that the copper smoke shall pass direct into the retort, and the carbonic acid and colouring matter in the coal smoke shall pass by itself from the fire compartment into the stack, and thence into the atmosphere, so that the products are in no way injured or discoloured. Over one of the furnaces he places a boiler, and conducts a steam-pipe down the outside of the furnace, under the fire vault, through the centre of the cast-iron flue, in the middle of the block, level with its surface, for creating sufficient draught to drive the copper

smoke through the retort. There is sufficient draught to carry the coal smoke by means of the stack. The floor of the calciner is of cast-iron plates, lapping on each other by halves, so that an even surface is presented, and rests on the ledges arranged for that purpose, on the cast-iron perforated walls. The trap-doors for rrabbling the calcined ores into the vault are iron boxes, fixed flush with the calciner floor, through the floor of the fire compartment, so that there is an uninterrupted exit for the ore from the calciner floor straight to the vault. The floor of the fire compartment rests on the vaults. The furnace is so arranged that on either side there is a cast-iron cheek 2½ inches thick, the whole length of the furnace, rising sufficiently high to form a good bed of fire, and placed 8 in. away from the upper-walls. These upper walls are of cast-iron, solid, to prevent the fire from playing into the calciner.

The fire passes down the sides of the solid walls, through the perforated walls of the fire compartment under each calciner, the fire always passing under the centre calciner before finding its way into the stack, through a flue under that calciner. The retort is formed of iron, the size of the flue at one end, and gradually lessens as it approaches the worm; it should be from 20 to 30 ft. in length, but its actual length will greatly depend on the height of the water for cooling the worm, as if the water comes from a height it will not be required to be so long as if it came from the level ground. The steam and copper smoke pass through the retort to the worm, where they condense in the shape of sulphuric acid, and the undensable gases, such as sulphuretted hydrogen and sulphurous acid, pass from last coil but one of the worm through a pipe into a cast-iron box by the side of the worm tank, fitted with a lid, which can be fastened on and removed at pleasure. This box is filled with oxide of iron, which completely holds in subjection the above gases, exactly on the principle of purifying coal gas, which is by far the simplest plan, as by applying the usual litmus, or other test-papers, to the top on the lid it is at once ascertained if the purifier is too highly charged to purify any more, in which case the lid is removed, and the oxide of iron taken out, the box being refilled with fresh, and the lid fastened on again. The foul oxide is placed in a heap under a shed, exposed to the air, where it readily heats of itself, and throws off everything perfectly innocuously, and in a few days it is ready to be used again. The gases are so completely held in subjection in the purifier that no smell whatever would be detected from the pipe near its surface. The sulphuric acid drains from the worm into a leaden tank just under it, from which it is drawn off.

In case the work should ever foul by the small particles of copper or arsenic lodging, it is arranged that the steam should be cut off from the boiler into the retort; and the cock of the steam-pipe, on its first coil, should be turned on, by which the full power of the steam is used as a cleanser, driving everything before it into the tank or other receptacle. Mr. BANKART has also arranged, that when the ore is finished calcining, and has been drawn through the traps into the vaults, and when water has been thrown on it as is usual, that the noxious gases, which are evolved in considerable quantities, are carried off by the means of a flue at the foot of the vault, in the centre calciner flue, where it passes into the retort with the copper smoke. This vault flue is fitted with a door, with a strong spring, with a handle from the door extending to outside of vault, with a hitch by means of which it fastens when the vault is clear, the man lifts the handle, and the door springs back again and closes the flue. The worm is of earthenware, the diameter of the pipe being 9 in., and that of the coil 4 feet; and as it is proposed to have five coils, there would be about 200 feet of cooling surface for condensing the smoke and steam. The quantity of steam used is only just sufficient to create a draught for the smoke through the comparatively small aperture of the retort, so that the steam is thoroughly impregnated with the sulphuric acid under the most favourable circumstances.

IMPROVED BLASTING POWDER.

Some interesting experiments have recently been made in Belgium, France, and Germany, with an improved blasting powder, specially intended for mining purposes, and recently introduced into this country by Messrs Schäfer and Budenberg, of Buckau-Magdeburg and Manchester. The powder consists, as usual, of saltpetre, sulphur, and charcoal, but with the addition of certain vegetable and mineral matters, patented by one of the inventors, and is claimed to have two great recommendations—it leaves scarcely any smoke behind it, and its power, compared with the best blasting powders hitherto in use, is from 50 to 60 per cent. greater, so that its application could not fail to be attended with great economical advantage, whilst it would secure at the same time increased health to the miner, and the more speedy prosecution of the underground works, which would be no longer interfered with by the penetrating smoke which has heretofore been so general. The selling price of the powder would not be higher than that of the powder hitherto in use; at the same time scarcely one-half the weight would be required for the same charge, and a considerably greater effect would be produced. It has likewise the further recommendation, which has been wanting in several of the new powders recently introduced, that it is employed precisely in the same manner as ordinary powder, and that no greater danger attends its use in consequence of the patent material being added.

Amongst the more recent experiments are those which have been conducted during some months at the collieries at Frameries, Belgium, under the direction of Mr. Gillis the Government Mining Engineer, which have given results showing the new powder to be 50 per cent. stronger than that in general use. Mr. Ehrenberg, the representative of the inventors, conducted the experiments, which were made in the presence of the Government engineers, who express the opinion that the principles laid down upon theory have been thoroughly demonstrated in practice. According to the instructions of the Minister of Public Works, Mr. Jules Gernsart, the principal mining engineer for the province of Liège, has made a report to the department, which, from the fact of the trials being comparatively small, are particularly interesting. Mr. Gernsart's report is too long to translate completely, even if the state of the district and places of the experiments are of no commercial interest. It will suffice to mention that the descriptions of powder were tried—that of Messrs. Schäfer and Budenberg; that of Messrs. Hilgers, of Clermont; and that manufactured at the Government factory at Weitzman.

The report of M. Clermont states that the combination of materials composing the powder of Messrs. Schiffer and Budenberg is made with the view of obtaining slower combustion, and to secure the combustion of the gas and heat produced by the deflagration. This powder acts in the bore-hole in the manner of a lever, whilst the ordinary powder, exploding more suddenly, acts rather in the manner of a hammer, producing a shock more or less violent. The first experiments were made in free air, the powders being burnt in a closed chamber upon slabs of polished stone. The powdered powder of Messrs. Schiffer and Budenberg gave an intense and brilliant flame, scarcely any smoke or odour, and the combustion consisted in burning with but little noise, and as regularly at one point as at another; there were no sparks thrown off. The residuum consisted entirely of whitened globules, and no carbonaceous deposit. Thus, the results of this experiment was perfect combustion, as is proved by the brilliancy of the flame, the absence of residue, and the small quantity of smoke. There was a total absence of the penetrating and sulphurous odour of the smoke of ordinary powder. The Wetteren powder, tested in the same way, deflagrated suddenly, and with noise; the smoke was very thick, and the combustion was not so regular as that of the powder of Messrs. Schiffer and Budenberg. The combustion was evidently much more rapid than in the first experiment. With the Clermont powder the deflagration was less prompt, there was a thick sulphurous smelling smoke, an abundant carbonaceous residue, and a large number of sparks were thrown off. Here there was evidence of the elements entering into the composition of the powder being badly applied. The combustion was far from complete.

The second series experiments consisted in practical blasting, carried on both at surface and underground; the rock operated upon at surface was calcareous, and of ordinary resistance. The trials proved that Messrs. Schiffer and Budenberg's powdered powder produced considerable effect with very small charges; the dislocation extended to a depth of 100 feet, and the noise of the explosion, the noise of the powder falling, and the sparks were scarcely perceptible, all that was heard was the dull rumbling of the earth, the tapping was not blown out, the smoke was inappreciable, and all the gas resulting from the combustion was burnt within. The Clermont and Wetteren powders, submitted to the comparative tests, gave the results every day obtained with them. In the face of the results obtained and detailed in a tabulated appendix to the report, it was considered that the new powder was well adapted to adapt to all the conditions of blasting, powder, when employed for quarry work." The results underground were equally satisfactory—the quantity of ground broken was very large (a charge of 104 grammes of the new powder produced a considerably better effect than 189 grammes of Clermont powder of ordinary quality, whilst there was an almost total absence of smoke and smell. Mr. G. de Schiffer explains the reasons of the superiority of his powder in experiments with regard to blasting in the mines, thus: "On account of the experiments made under his direction, that Messrs. Schiffer and Badenbergs powder has given less smoke, and that less noxious, than ordinary powder; and that the new powder used under suitable conditions, considering the nature of the rock, the depth of the hole, and the weight of the burden, gives results more satisfactory than those obtained with ordinary powder." The experiments were carried out by a series of trials, and were made with the quality which the inventors designate "a slow powder," and that its use does not necessitate any special or unusual arrangements.

DETECTION OF FIRE-DAMP.—It appears that Mr. G. F. ANSELL, to whose invention reference has already been made, has just returned from a visit to several collieries in the North, where he has had an opportunity of practically testing his Indicator. The success is complete; the instrument has proved in practice capable of detecting and indicating in a manner intelligible to the meanest collier the presence of even 1 per cent. of fire-damp in any given spot in the pit. The objection which was raised to Mr. ANSELL's invention—that after the instrument had once been acted upon by a flogging of the atmosphere the pointer would not return to its original zero—appears to be groundless. In practice the indication is made as frequently as required, even if it be several times in a minute; and after each indication the pointer returns to its normal position, ready to indicate afresh. The indicator is used with quite as great facility, and requires no greater care in its use than the DAVY lamp, but there is this important difference, that whilst the lamp will not indicate less than a dangerous quantity of fire-damp, the indicator will indicate the presence of any amount of fire-damp, however small.

tity of fire-damp, the "Osmose Indicator" will give visible evidence of the most minute contamination with the destructive gas. An interesting letter on the subject appears in another column of this day's Journal.

PROFITABLE RAILWAYS.—There is a little group of Northern railways—the Whitehaven, Cleator, and Egremont, the Whitehaven and Furness, and the Whitehaven Junction—which are largely dependent on metallurgical pursuits, and which have proved exceedingly lucrative to the shareholders. First, with regard to the Whitehaven, Cleator, and Egremont. In 1857, the dividend was 6½ per cent.; in 1858, 7 per cent.; in 1859, 8 per cent.; in 1860, 10 per cent.; in 1861, 10 per cent.; in 1862, 10 per cent.; in 1863, 13½ per cent.; and in 1864, 13 per cent. In 1858, the Whitehaven and Furness divided 1½ per cent.; in 1859, 2½ per cent.; in 1860, 3½ per cent.; in 1861, 3½ per cent.; in 1862, 3½ per cent.; in 1863, 5½ per cent.; and in 1864, 7½ per cent. In 1853, the Whitehaven Junction divided 2½ per cent.; in 1854, 4½ per cent.; in 1855, 3 per cent.; in 1856, 2½ per cent.; in 1857, 3½ per cent.; in 1858, 4½ per cent.; in 1859, 7 per cent.; in 1860, 8 per cent.; in 1861, 5½ per cent.; in 1862, 6 per cent.; in 1863, 8½ per cent.; and in 1864, 16½ per cent. The entire amount of capital engaged in these three lines is about 1,000,000*l.*

LANCASHIRE AND CHESHIRE STEAM COAL.

The coalowners of the Northumberland and Durham district, a few years since, succeeded in dividing with South Wales the monopoly for supplying the Government with steam coal. It was then satisfactorily demonstrated that all that is necessary to secure good results with North Country coal is to employ a furnace of somewhat special construction. The success which attended this discovery having been the means of placing the North Country coal on the Admiralty List, induced those engaged in the Manchester district coal trade to seek a similar privilege for themselves. In connection with these agitations, it should be considered that the actual advantage arising from business connections with the Admiralty is comparatively small, but that a large number of coal consumers estimate the value of coal not by its heating powers, or other good qualities, but by the position which it is accorded by the Government officials who have the compilation of the Admiralty List, and also regard the list as infallible. It is obviously to the interest of the producer to obtain a place therein.

The spirited manner in which the South Lancashire and Cheshire Coal Association conduct business undertaken by them is familiar to the readers of the Journal; and the Kirkless Hall Works seem to be the natural centre, through the energy and liberality of Mr. LANCASTER, for the development of anything calculated to advance the interests of the trade generally, so that it will not be surprising that in the important experiments now to be made with the view of securing the coal in which the association are interested, the Kirkless Works are chosen as the scene of operations. The superintendence of the experiments has been placed in the hands of Dr. THOMAS RICHARDSON, whose efforts contributed so much to the success of the North Country coal being recognised by the Admiralty, and Mr. L. E. FLETCHER, of the Manchester Association for the Prevention of Steam-Boiler Explosions, and the result to be anticipated from the experiments can scarcely be over-estimated, since it is intended not only to test the coal, but to ascertain the comparative value of the different kinds of steam-boilers manufactured and in use in Lancashire.

In connection with the experiments, the Association have spared no expense in making the arrangements, having not only provided a boiler, a *fac simile* of the experimental boiler in use at the Devonport Dockyard, but obtained three others of the ordinary Lancashire mill pattern. Messrs. HICKS, of Bolton, whose reputation is very high in the district, have constructed and forwarded one gratuitously to Kirkless Hall, for the purposes of the trial; and Messrs. CLAYTON, of Preston, have supplied one on the same conditions; the third being purchased by the Association. One of GREEN'S economisers has likewise been furnished gratuitously by the proprietor, the Steam-Boiler Association undertaking its erection. By the courtesy of the chief engineer of Devonport Dockyard, Mr. Weeks, the chief stoker there, will have charge of the boilers and firing throughout the progress of the trial, so that an amount of information may be anticipated in the report which will be of the greatest value to the coalowners, to the Lancashire manufacturers, and to the public generally.

BRICKMAKING AS AN INVESTMENT.

"YOU ARE A BRICK" is becoming old-fashioned as a compliment, but it is still a favourite commendation, not only with our fast young men, but also with "all sorts of men," who accommodate their phraseology to the ways of the world. We wonder what the origin of this phrase is. Some account for it in a manner too ludicrous to believe, and hardly anyone can make an attempt to explain it at all. We fancy it must be analogous to the expression occurring in old Celtic manuscripts, in which the eulogy is pronounced upon certain kings, chiefs, warriors, bards, &c., "he was a rock." A rock, in old Oriental and Celtic writings, is the most common emblem of firmness, stability, solidity, and sublimity; a man of resolute mind, stable in his purposes, enduring and patient, with a generally magnanimous aspect of character, was called "a rock." No doubt it is in this spirit that a man of modern type, but of similar stamp, is called "a brick;" and why not—does not the simile fit? A brick is useful and ornamental; it is, where employed, just the right thing in the right place, and a man who is "the right man in the right place" may, therefore, very naturally be called "a brick." He just fits into things, appears as if he were where he ought to be, looks, as an Irishman would say, "warm" and comfortable, proves himself useful in sustaining the fabric of society, and is, "on the whole," "a jolly good fellow." This is a brick. What good things bricks must be to put us so much in mind of the superior qualities, especially those most in connection with practical usefulness and social enjoyment. Well, they are good things; we never could get on without them. Our houses, haggards, factories, furnaces, kilns, chimneys, sewers, causeways, viaducts, aqueducts, barracks, public buildings, and even palaces, are sometimes exclusively, always mainly, built of bricks. The marble, granite, limestone, sandstone, the rock in multifarious qualities is useful also in demand; but brick is foremost in utility. We can generate it where stone can be used, and we can employ it everywhere, where stone would be of comparatively little value. Dr. VAUGHAN says that this is "the age of great cities," we say it is "the age of bricks." Bricks everywhere, in town and country, from the hotel to the hotel, from the parish-wall to the Thames Embankment.

We were led into this train of thought by observing that there has sprung up of late a great desire amongst speculative men and practical men to possess land fit for brick-making, and that, nevertheless, the supply of good bricks in any department of the trade falls far, very far, short of the demand, so that it is "not unreasonable" that attention should be called to the particular department of enterprise now under notice. Among the few undertakings of an extensive character recently put forth for brickmaking the **FREEMOULD LAND AND BRICKMAKING COMPANY** may be prominently mentioned. It offers all the conditions of a great success. The resources are most plentiful. It offers, and none of them, but the best, ready and well-known, and well-understood. The management of the company is not, therefore, to be committed to incompetent hands. The property is admirably situated, fronting a navigable river, the Avon, near Arundel; the background consisting of chalk hills, and there is abundance of sand, furnishing materials essential to ornamental brickmaking, which brings so large a profit. The clay spread over the estate is of the very best quality for brickmaking, ordinary and fire-proof, and that which enters, with other ingredients, into the decorative manufacture. In the immediate neighbourhood there are manufacturers of cement and artificial stone, which are so successful, and prove the value of the clay for general and special purposes. The navigable Avon can convey the products of the estate to the great communication with the metropolis, and the property, which passes the boundaries of the estate, gives facile access to all parts of the South of England, and virtually to all England.

cess to pass through the underground is especially well conditioned, but is there room for the company in the field of commerce? Of making many bricks, as of "making many books, there is no end." Where do they all go to? There are vast regions of brick fields around the metropolis and in the provinces. Is there a market for all their produce? Alas! we are badly off for bricks, notwithstanding all the clay that is moulded into such useful forms. How does that come to pass? Why, the demand is beyond the supply, greater than the latter is, and is likely to continue to be so during the life of the present generation. The progress of building in the metropolis and all our great cities has been prodigious. In London, where it has been going on since the days of Henry VIII., they have already exceeded all reasonable calculations of what they ought to be, in proportion to other items of either household or business expenditure. In some of the suburbs of London, especially in the west, rents have increased in 10 years nearly 80 per cent. If material could be obtained, building would go on with even vaster progress, but it is common for contractors, by their orders, to be in advance of the manufacturers two years, not unfrequently three years, and sometimes even more. Nor is this state of things likely to change. In the neighbourhood of London, especially westward, scores and scores of fine mansions and splendid houses are projected. Over large areas of country, the old buildings are pronounced dilapidated, and must be torn down and are to be replaced by new edifices. The railways are girdling the circumference and penetrating the heart of London, and a similar process goes on around and in our great provincial cities. Bridges, aqueducts, viaducts, quays, manufactories, hospitals, asylums, churches, chapels, &c., are multiplying in every part of the United Kingdom, in a ratio which amazes even the most thoughtful and hopeful concerning our material resources and progress. Bricks cannot be obtained to meet this marvellous advance of civilisation and material improvement, he is

the Supply.

therefore, a friend to truth, and a benefactor to his country, who had obtained adequate "There is or" thing in connection with this movement. He was able to obtain adequate information from all quarters as to the conditions prevailing for a building then formerly, all other things being equal. It became some considerable time ago the fashion and policy in the building trade to "throw up" buildings, as the phrase went. The walls were thin, scarcely keeping out the wet, and allowing our villa population to suffer from cold and sneezing through these flimsy partitions between their houses; and the foundations were inadequate, and the accommodations for the masses of people, who were everywhere, were in general a universal complaint in the city. There was no end of all that; that a new era is about to dawn upon the government and comfort of the dwellers in the metropolitan districts; and

The question of Reducing Freights on Railways and Canals from South Staffordshire is attracting increased attention. There are three distinct new schemes of competing lines of transit from the district to London. A new canal is proposed; the Midland Railway Company have for some time been endeavouring to get a branch from Walsall to Water Orton, whilst an earnest effort is being made to get a line from Wolverhampton to Coventry, which would communicate with a line from Wales to Ebbw Vale, and so place the traffic on the Great Northern. The names of many of the leading ironmasters, and other commercial men of the district, have been placed on a subscription list to cover the expense of an application to Parliament on behalf of this last-named proposal. On Tuesday afternoon took place on the subject at the Queen's Hotel, Birmingham, a conference between Mr. Moon, Chairman of the London and North-Western, Mr. B. Williams, representing the Great Western Company, met the following representatives of the Grand Junction Canal Company, — Mr. W. O. Foster, M.P., Cashier of the Iron Trade of South Staffordshire; — Mr. W. Sparrow, M.P., Chairman; Mr. J. Hartley, Mr. F. Smith, Mr. W. Dawes, Mr. S. Lloyd, and Mr. Walter Williams, jun. The deputation from the Iron Trade stated that they were

deputed at the quarterly meeting of the iron trade to represent to the great carrying companies the unfair and unequal charges to which they were exposed, and stated that they had received offers of support from the iron merchants in London and Liverpool, and from the general hardware manufacturers in the district. They observed that projects for new rail-roads were earnestly seeking support from the district, but that they had first applied to the existing companies to afford them the relief they sought. They pointed out the great inequality of the rates, and showed that if rates adopted on other lines were applied to the lines from South Staffordshire to London that the charges would be very greatly reduced.

The question of the tolls charged on the Birmingham Canal, as set forth in this letter last week, was also discussed. The representatives of the carrying companies promised to take the matter into consideration, and to give a reply by an early day. The more these questions are discussed the more necessary does it appear that Government shall interfere to fix uniform rates for the carriage of goods in various parts of the country.

A new line from Staffordshire to Market Drayton, which will open a communication with Shropshire and South Wales, is to be commenced very shortly.

Kylands' "Iron Trade Circular," of Saturday last, contains an interesting account of Howes's Patent Furnaces, which are now applied to the whole of the 22 puddling, and also to the mill furnaces of the Eagle Coal and Iron Company, at West Bromwich, who are extensive producers of every kind of angle and other moulded bars. The principal novelty of the furnaces essentially consists in introducing a great current of air on every side of the furnace, and also upon the iron itself. By this means a smaller grade is required, and a great saving of coal is effected. By these means, the process goes on more rapidly, the saving of coal is from 20 to 25 per cent, and a much greater yield of iron is afforded, whilst the puddler does five heats in the time it would otherwise take him to do three. The fact that the firm, having first tried the patent at four furnaces, have now applied it to all, speaks very strongly in its favour. Although, as yet, machinery has not been dispensed with the manipulation of the puddler, many inventions are facilitating his labours and diminishing the strain he suffers in his arduous toil.

An enquiry took place on the 20th inst., before Mr. Harding, coroner, with respect to a singular accident in a shaft at the Woodhuts Colliery, Tunstall, North Staffordshire. Two butties, William Baddeley and Jacob Chadwick, got into the cage at the bottom of the shaft, and gave the signal to wind up, when the cage, instead of ascending the shaft, went down into the sump. Baddeley was forced out by the water, and calling for help, was dragged out of the sump with his leg broken, and he had received further injuries, from which he died on October 18. Chadwick sank into the water in the cage, overhead, and when he recovered recollection, was being drawn up the shaft. Mr. Wynne, the Government Inspector, attended, and showed that the catches which should have sustained the cage above the sump were in bad order, and the engine-man stated that when he took off the brake the chain dropped. The jury censured the engine-man, and those responsible for the state of the catches, and also blamed the managers for the sump being so full of water, but returned a verdict of "Accidental Death."

REPORT FROM DERBYSHIRE, YORKSHIRE, AND LANCASHIRE.

Oct. 26.—The Iron Trade has assumed a quiet tone since the quarter-day, as, as manufacturers ordered pretty largely, all the works are fully employed. The pig-makers are very full of orders, and many refuse further demands upon them, except on terms equivalent to an advance. There is still a good enquiry for railway iron, such as rails, fish-joints, springs, &c., but the orders for manufactured iron generally are less than they were a few weeks ago. Machinery is in good request, more particularly for export, and orders for large castings for heavy engineering works have been given out during the past week. There is an agitation now at work amongst the iron and coal masters for the purpose of inducing the different railway companies to lower their freights, and I hear the Midland and the North-Western are not unwilling to give the greatest facilities they can to forward the views of the Committee of the Iron Trade, but these assurances appear to be doubted by some, that the railway companies will not keep faith with their promises.

The Coal Trade is increasing in activity, and the demand from all sources very good. The hard or steam coal of Derbyshire is increasing in popularity, and now takes its position in the market beside the best Welsh coal; and, as the traffic arrangements enable the Midland coalmasters to compete with their Welsh brethren on more equitable terms, the enquiry for Derbyshire hard has materially augmented. The strike at the Thryberg Colliery is in course of amicable settlement, a deputation from the men having been sent to the masters to negotiate. We should have better hopes of this if the influence of the Union were not mixed up with the strike. We hope for a settlement, but at present we have not heard that one has been effected.

The inquest has been opened upon the bodies killed by the explosion in Messrs. Shaw and Unwin's colliery, at Brightside. Naked lights were used, and it is stated that a large volume of gas rushed suddenly from the face, and ignited at Melburn's light, with another man and his son, were killed. No less than 500 were employed in the pit. A collier who had been employed in the mine complained strongly of the delay which would ensue before the Government Inspector would examine the mine. He asserted that the ventilation was bad, but that all would be made "square" before the Government functionary could examine the mine. The coroner replied that he was aware such things were done. It was the duty of the proprietors of the pit to give immediate notice to the Home Office, and no doubt they had done so. It should be mentioned that this is a very general complaint amongst colliers, as, as an explosion almost invariably renders the works impassable for sufficient time to admit of important modifications being made, it would certainly be well for the inspectors to notice particularly whether improvements have been introduced in making the repairs.

There is nothing new in regard to the lead mining interest in Derbyshire. The wet weather has been prejudicial to mining operations, not only at these mines, where the ore is got by hand labour, but also at some mines where the power of steam has been applied to pumping.

Mr. Deacon, has recently patented a new discovery of oil in the Cleveland hills, which is extracted from the shales found above the ironstone, and is said to resemble the American petroleum. Works are being erected at Gnoscombe to produce the oil from the shale, and it is computed that 25 gallons can be produced from 1 ton, at a cost of 6d. per gallon. Blast furnaces are to be erected, and it is stated that pig-iron can be produced at 3s. per ton, less than in other districts.

The local coal and shale markets are quiet, and the quotations for mining shares are very nominal. John Brown and Co. (Limited) are seeking for additional capital. The value of the stocks of the new limited companies is about the same as last reported.

DOES SULPHIDE OF GOLD EXIST IN NATURE?

A COMPLETE REMEDY FOR THE MERCURY DIFFICULTY IN TREATING GOLD AND SILVER ORES.

In giving an affirmative reply to the important and interesting question—Does Sulphide of Gold exist in Nature?—Mr. J. A. Hitchens, of Denver, Colorado, in a communication to the *Mining and Scientific Press* of San Francisco, writes that most of the workable ores in that country are of that description containing usually sulphides of gold, silver, copper, and often lead, all mixed together, with fine quartz crystals, and some quartz uncrystallized. In elaborate experiments on these ores, three years ago, he found in nearly all of them *mineral oil*, as well as sulphur and arsenic, in quantity, and other base metals. By roasting pulverized ores in a common fire, and then plunging them into cold water, he separated the copper as sulphate on the bottom of the iron vessel, and floated off the mineral oil. In powdered ore after the above treatment, he found the gold in fine scales at the bottom of the pan, and though yellow, yet quicker than would touch them until he re-heated the ore. The silver-lead ore, when they lost their yellow hue, and amalgamated without being so saved from them by their mills, as they manage them, by the wet process; or by fire, so that no metal can be caught or saved upon them, though these ores in his experiments on these he found that roasting them when pulverized with one-twentieth of soda by weight, would so soften and decompose their constituent particles, with mercury, and separating the lead from the other metals by the explosive process, he found that sulphur was a great aid in combustion, and that alum was nearly as small quantity, would fix the most stubborn of these stubborn minerals, and these but a moderate heat.

There is a class of ores, Mr. Hitchens observes, known as argentiferous galena, which contain considerable yellow pyrites, or sulphates of gold. These are the richest ores in lead, which has hitherto prevented the collection of the more valuable metals; in fact, the lead has been the only metal obtained from them. It is not much when the following recipe, at an expense of a few cents per pound, which will treat the pulverized ore one-tenth to one-twentieth by weight each of bi-carbonate of soda and resin; place the compound in a cone-shaped boiler-iron, or other suitable article, and when brought up to a white heat pour into a cavity in the middle of the mass sulphur and double of alum, which will produce an immediate flux, preventing the metal from being covered in a button of more or less purity; the whole time required for the operation being about an hour, and the amount of lead in the ore does not matter, but the bottom for brick or granite, with a dome top and tall chimney. It has the purpose of charging it, and another opening near the top of the contained crucible, for the purpose of charging it. The crucible may be made of boiler-iron, or of a heavy one, and if of large size it is to be provided with one or more flues through its length. It is to be placed vertically in the centre of the furnace, with but a few

inches space around its rim or larger part; its top has half-section iron covers, hinged to the rim; a vessel to contain hot water is placed above the crucible, with facets, to detach slag from the crucible. The crucible has an opening in one side, near the bottom, with curved doors to fit, opening outward into a square case passing through the furnace walls to take out the refuse charges through. A curved iron pipe of an inch or two in diameter, screwed into or riveted on the bottom of the crucible, and passing out through the furnace wall, serves to draw off the melted ores when sufficiently refined into cold water, or into moulds. The inner opening of the pipe is protected from stoppage by a convex iron plate, scooped round the edge, covering the bottom of the crucible, and supported an inch or two above it on proper bearings. The pipe is to be closed by a clay plug, externally.

With regard to the smelting of the richer mineral ores, Mr. Hitchens adds that the inexhaustible beds of nitre, soda, alum, and sulphur, as well as salt, so often found between the Rocky Mountains and the Sierra Nevada range, seem to have been specially placed by Nature in close proximity with the mineral wealth they are destined at no distant day to assist in working out of its rude form in the mine, preparatory to its preparation for the use and convenience of man.

THE MANUFACTURE OF COKE FROM SMALL SLACK.

The existence of immense quantities of fine coal slack in the South Staffordshire and other mining districts, in a state almost, if not quite, commercially valueless, is a fact well known to those acquainted with the coal and iron trades of this country. The fact that most of this slack, which has hitherto been considered waste, possesses all the chemical properties of the coals from which it is derived has also been for some years forcing itself upon the attention of those interested, and stimulating their efforts to recombine it as a fuel suitable for smelting and other purposes. The extensive use of coke in iron smelting, and the advantages accruing therefrom, show that the most obvious way of utilising this slack is by converting it into coke, which would also be the way of giving it the greatest possible value. The difficulties in the way of coking the Staffordshire slack arise from the fact that, although possessing the valuable properties for which Staffordshire coal is noted, it does not possess sufficient bituminous matter to cause it to cake or bind in the process of coking. The most successful method of coking the Staffordshire slack is found to be by mixing with it a certain portion of bitumen, in the shape of Welsh or other bituminous slack. The greatest difficulty at present experienced is with respect to the ovens, as in those hitherto in use the heat developed in the process of manufacture is not applied with an effect or uniformity sufficient for the thorough fusion of a thick mass of slack, and the production of good hard coke. The charges are found to be caked only in layers at the top and bottom, the interior of the charge being imperfectly fused and waste.

It is with a view of remedying this defect in the process that the ovens patented by Messrs. HICKLIN and PARDOE have been designed. The principle upon which they are constructed is that of causing the flame and gases from each oven, in a group, to enter into a common system of flues passing over and under every oven in the series, thereby causing a thorough intermixture of the gases, the development of intense heat, and the application of the same in a more uniform and effective manner than hitherto, the coking chambers being, at it were, enveloped in fire. It is found that the ovens will thoroughly fuse and convert into best hard coke thick charges of Staffordshire slack, with a less proportion of bitumen than is used in any other ovens, and without waste. The charges are so thoroughly fused that they are drawn *en masse*, the doors being as wide as the ovens. Any one or more of the ovens in a series can be drawn and re-charged without interfering with the others, and the charge is immediately ignited by the heat of the contiguous ovens and upper and lower flues, and in its turn contributes to the general effect. The perfect combustion of the gases (as shown by the absence of black smoke from the chimneys) develops an intense heat, which after expending itself upon a long group of ovens, is still sufficiently powerful to be applied to useful purposes, such as raising steam for working engines, and for heating and drying purposes generally.

NICKEL AND COBALT, AND THE GERMAN SILVER MANUFACTURE.

In an article published some years since in the *Mining Journal* the history of Wolfram from the time it was regarded as an evil by the miner until it attained an enviable position was carefully traced; and in a highly interesting paper, of which the subjoined is an abstract, prepared by Mr. STEPHEN BARKER, of Birmingham, and intended to have been read at the recent meeting of the British Association for the Advancement of Science, the history of the manufacture of Nickel and Cobalt is recorded in an equally instructive manner.

There are few metals, says Mr. Barker, whose history is more instructive than nickel. Originally to the miner a source of trouble and annoyance, it has by a happy combination of scientific observation and manufacturing enterprise in our countrymen—one may, indeed, say our fellow-townsmen—become developed into an important branch of manufacturing industry; and is under its various forms not only a source of luxury, but one of daily necessity to thousands. About the middle of the last century, previous to which nickel was unknown in Europe (though alloys were long previously known in China), the copper miners of Sweden and Germany came upon certain ores of a different character from any they had hitherto observed. They had something of the brilliancy of silver, with the reddish tinge of copper, or rather of bismuth. At Schneeberg, in Saxony, where from time immemorial rich silver mines had existed, fresh lodes of ore were laid open, so glittering and so full of promise as to cause much excitement, and great was the wrath and bitter the disappointment of the honest German labourer when, after endless labour and innumerable trials, instead of the bright white precious metal, ductile, malleable, and instructive by fire, that he could get from the ore was a dirty whitish metal, brittle and friable, even to dust, under the hammer, and converted by fire into a greyish ash. Whenever the reddish-white ore turned up the miner knew that his labour was in vain, until at length, in sheer vexation, he nicknamed the new villainous ore "Nickel," and another and similar ore generally associated with it "Cobalt"—both these names being at that time applied by the superstitious German miner to certain gnomes, or evil spirits, who were supposed to have bewitched the ores, the mountain, and the mine.

Kronstedt's and Bergman's researches directed the attention of chemists generally to the new metal; and Thomsen and Lapidus and Berzelius contributed to its history. Richter, of Berlin, first produced it in a state of chemical purity in the year 1804, but only in small quantities. The method he adopted was by heating the oxide of the metal (probably with the accidental access of carbonic oxide) in porcelain retorts. It was at first classed among the precious metals. Its great resistance to fusion for a long time formed an insuperable bar to its use in the arts, until a method of alloying it with zinc was discovered; it then became easy to alloy it with other metals, and finally the alloy of the three metals—copper, zinc, and nickel—was known in common under the names of new silver, nickel silver, and German silver.

In the year 1827 a paper, by Dr. S. Ersmann, of Leipzig, "On Nickel, and obtaining it," attracted much attention, and soon after Dr. E. A. Gerner, a chemical manufacturer at Schneeberg, succeeded in producing an alloy of copper, zinc, and nickel, of excellent colour and quality, to which he gave the name of "Argentan." Although after Kronstedt's discovery attention was generally directed to utilise the new metal, and various alloys introduced, under the names of white copper, semi-argentan, new silver, &c., the extent of manufacture was quite insignificant previous to about the year 1830. About that time the refining of nickel was first introduced into England by Mr. F. N. Johnson, of Haxton Garden; and soon after Mr. Hallett, of Broadwall, London, commenced the refining of Nickel. At this time the price of nickel was 4s. 6d. per pound. The nickel of commerce was up to this date very intractable for all the purposes of manufacture, except for casting. Spoons, forks, &c., were until this date mostly cast in sand. About the year 1833 a great improvement took place in the refining of nickel. Mr. Askin, at that time following or studying the profession of a veterinary surgeon in Birmingham, had occasion to visit several parts of Germany on business, and having a good knowledge of chemistry, he became acquainted with certain facts relative to the refining of nickel, which led him to devote special attention to the subject; and on returning to Birmingham he succeeded in refining nickel by a purely chemical process. He dissolved the metal in nitric acid, and then precipitated the impurities, and then threw down the nickel as oxide. For a short time he was in partnership with Messrs. Merry, to carry out his discovery, but the partnership was subsequently dissolved, and Mr. Askin associated himself with Mr. Brooke Evans, under the firm of Evans and Askin. The German silver trade rapidly extended in the year 1840, or thereabouts. The process of electro-plating and gilding first began to develop as a successful manufacture chiefly under the auspices of Messrs. Elkington. This gave a powerful impulse to German silver manufacture, which, from its great beauty and durability, soon superseded the old plated copper; and it had the great advantage that whereas copper must always be stamped or spun at a lathe, German silver can be either cast or wrought into a finished design of any article before plating.

Nickel and cobalt, originally found at only a few mines in Sweden, Norway, and Germany, are now found in almost every mining district both of the Old and New World. It may be observed that although the ores of Norway and Sweden are not very rich, they by their abundant supply contribute very largely to our nickel manufacture. One of the most promising nickel mines is at Canton Valais, in Switzerland, but it is now nearly closed. As a rule the mines are not worked for nickel alone, but as an adjunct in mining for other minerals. The price of the metal has varied considerably. In 1840 it was 4s. 6d. per pound; in 1849 it had risen to 13s. per pound (7); but it has since gradually come down, until its present price is again 4s. 6d. Commercial nickel, although sold in ingots like the malleable metal, will not roll. The difficulty of obtaining it quite malleable, which it is when chemically pure, has, perhaps, been a cause of its being only hitherto employed as an alloy (German silver), which is composed, according to the requirements of the manufacture, of various proportions of nickel, copper, and zinc. Intimately associated with the refining of nickel is that of cobalt, as they are very generally found together in their ores. Cobalt has been used in the impure state as a stain, for imprinting the intense blue of porcelain and the better kind of pottery, from time immemorial. About the year 1840 Mr. Benson, of Birmingham, succeeded in refining cobalt by a purely chemical process; however, he had scarcely brought his discovery to perfection at the time of his decease. It was afterwards completed and carried out by Mr. Askin; and Messrs. Evans and Askin continued up to the present time the chief makers of the oxide, that being the state in which it is now used. In 1844 the price was 40s. per pound, but it has been gradually reduced until now it is only about 12s. The number of persons employed in the nickel and German silver manufacture is—in Birmingham, 700; and in Sheffield, 500; this includes, of course, the manufacture of the various articles in which German silver is used. The production of refined nickel at this time is about 300 tons per annum, equal to about 1200 tons of German silver.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending October 23 was 10,714l. 10s. 8d.

India Office.

BY ORDER OF THE SECRETARY OF STATE FOR INDIA
IN COUNCIL, notice is hereby given that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, on or before MONDAY, the 30th instant, to RECEIVE PROPOSALS in writing, sealed up, from such persons as may be willing to supply—
CAKE COPPER.
And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock p.m. of the said 30th day of October, 1865, after which hour no tender will be received.
India Office, October 24, 1865.
GERALD C. TALBOT, Director-General.

FOUNDRY, HAYLE, SEPT. 29, 1865.—SIR: We beg to inform you that, in consequence of our INCREASING BUSINESS IN LONDON, we have purchased the HAYLE FOUNDRY WHARF (formerly Crown Wharf), NINE ELMS, where we shall carry on in all their branches the businesses of FOUNDRERS and ENGINEERS.

Having by this arrangement provided greater facilities for the dispatch of work confided to us by our friends in London, and being also enabled to extend our business, we are, in addition to the usual Engineering work hitherto undertaken by us, prepared to SUPPLY MINING MACHINERY from this wharf at the shortest notice, where also our resident engineer will be in attendance to give information in designing general plans and details of the most improved machinery for mining and other purposes.

Our offices hitherto at Clarence Chambers, 13, Haymarket, will from this date be transferred to the Hayle Foundry Wharf, Nine Elms, S., where all communications intended for our London branch should be addressed.

We are, Sir, your obedient servants,
HARVEY AND CO.

CAUTION—TO MANUFACTURERS OF TIN AND TERNE PLATES.—The Undersigned, being PATENTEES of TWO PATENTS FOR IMPROVEMENTS IN THE MANUFACTURE OF TIN AND TERNE-PLATES, dated and numbered respectively June 9, 1860, No. 1893, and March 19, 1863, No. 788, HEREBY GIVE NOTICE to all Manufacturers of Tin and Terne-plates that they will be LIABLE FOR ANY INFRINGEMENTS or USE OF THE SAID PATENTS, or either of them, unless they are protected by licenses to be duly granted by the said patentees, and which licenses the said patentees are ready at any time to grant upon terms to be agreed upon, upon application to them at the Cookley Ironworks, near Kidderminster.
Cookley, August 12, 1865.
JOHN SAUNDERS,
JOHN PIPER.

CONDENSING BEAM ENGINES, 42, 32, and 28 cylinders (second-hand), in first-class condition, TO BE SOLD CHEAP.—J. H. Wood and Co., India-buildings, Cross-street, Manchester.

HORIZONTAL AND VERTICAL ENGINES AND BOILERS of EVERY DESCRIPTION, new and second-hand. Monthly list on application.—J. H. Wood and Co., India-buildings, Cross-street, Manchester.

MORTAR MILL (new), REVOLVING PAN, 7 feet diameter, weight altogether about 5 tons. Price, £55.—J. H. Wood and Co., India-buildings, Cross-street, Manchester.

TO WORKING MINERS IN CORNWALL AND ELSEWHERE.—This class of labourers are subject to pains in the small of the back, arising from the nature of their labour, affecting the kidneys, &c. A remedy that gives instant relief forwarded on 2s. 6d. being sent in stamps to "Medicus," Post-office, Lower Gornal.

TO COUNTRY DRUGGISTS, &c.—BLUE SULPHATE FOR PICKLING WHEAT.—How to make it at 1/4d. per lb., or 4s. 6d. per cwt. (cells at 6d. per lb.) A recipe forwarded on 5s. in stamps being sent to "Medicus," Post-office, Lower Gornal.

THE CARBERRY MINING COMPANY (LIMITED).—The Directors hereby give notice that the ORDINARY HALF-YEARLY MEETING of the company will be HELD at 29, Westmoreland-street, Dublin, on MONDAY, the 6th November, 1865, at the hour of Two o'clock in the afternoon, for the purpose of receiving the directors' report and statement of accounts, the election of a director, and the transaction of the other ordinary business of the company.
By order, J. P. O'REILLY, Sec.
29, Westmoreland-street, Dublin, October 25, 1865.

QUEBRADA COMPANY (LIMITED).—Notice is hereby given, that the ORDINARY HALF-YEARLY GENERAL MEETING of the shareholders of the Quebrada Company (Limited), will be HELD at the London Tavern, Bishopsgate-street, London, on TUESDAY, the 31st inst., at Twelve o'clock precisely, for the purpose of receiving the report of the directors, the balance-sheet and statement of accounts, the election of directors, the election of auditors, and the ordinary business of the general meeting.
By order, JAMES WRIGHT, Manager.
No. 12, Copthall-court, Throgmorton-street, E.C., October 11, 1865.

THE DUNRAVEN UNITED COLLIERIES COMPANY (LIMITED).
Incorporated under the Companies Act, 1862, with limited liability.
Capital, £200,000, in 8000 shares of £25 each.
Deposit £1 per share on application, and £2 on allotment.
Calls not exceeding £3 per share, at intervals of not less than three months.
A minimum dividend of 10 per cent. guaranteed by the vendor for the first five years.

DIRECTORS.
Viscount MALDEN, Lordwater, Rikmansworth—CHAIRMAN.
BRYAN DONKIN, Esq., C.E., Estor House, Blackheath (Bryan Donkin and Co., Hermondey).
DAVID JOSEPH, Esq., Ely Rise, Cardiff (late Manager of the Plymouth Forge Company, Merthyr Tydfil).
GEORGE R. D. KORTON, Esq., Conservative Club, and Windsor.
JAMES THOMSON, Esq., 27, Birchington-lane, London.
WILLIAM P. BAYLISS, Esq., C.E., Clapham (late Manager and Engineer to the Madeley Wood, Coal, and Iron Company).
GEORGE MACDONA, Esq., 117 and 118, Leadenhall-street, London.
JOHN SMITH, Esq. (John Smith and Son), Loughborough, Leicestershire.
D. FRASER LUCKIE, Esq., 26, Ashley-place, S.W.
MANAGING DIRECTOR—Thomas Joseph, Esq., Tydrau, Pontypridd.

SHROCKERS.
Messrs. Crossley Brothers, 30, Cornhill, E.C.
Messrs. John Wade and Sons, Birmingham.
BANKERS.
Messrs. Barnett, Hoares, Hanbury, and Lloyd, Lombard-street.
Messrs. Wilkins and Co., Brecon Old Bank, Cardiff.
AUDITORS.
C. L. Lawson, Esq., F.R.S. and F.A.S., 101, Chancery-lane, London.
James Walkinshaw, Esq., Chelsea (late chief cashier of the Downland Ironworks).
SOLICITORS—Messrs. Bell, Brodick, and Bell, 9, Bow Churchyard, London.
SECRETARY—T. C. SIMMONS, Esq.
TEMPORARY OFFICES.—10, CULHAM STREET, E.C.

ABRIDGED PROSPECTUS.

This company is formed with a view of purchasing from the proprietor the Dunraven, New Britford, and Blaenclydach Collieries, in the county of Glamorgan, for the purpose of developing and further improving the property; and full powers have been taken for efficiently carrying out the same.
These properties are sold entirely in consequence of the vendor's capital being insufficient effectually to work so large a concern.
The proprietor has guaranteed to the satisfaction of the directors that for the first five years after the formation of the company 10 per cent. per annum shall be paid upon all the paid-up capital (taking the average of profits over each period). He will also continue to manage the whole business of the company, at a salary fixed by the directors.
There is sufficient plant at each of the collieries effectually to work a much larger quantity of coal than has been named.
The purchase money for the whole of the above-named properties is £130,000, and the same is to be paid by instalments spreading over two years. The proprietor will take shares to the extent of £50,000.
The price to be paid is based upon valuations made by several well-known and experienced colliery engineers, all of which have been thoroughly verified. The originals may be seen at the office of the company.
Prospectuses and forms of application for shares may be obtained of the bankers, at any of their branches, brokers, or solicitors; of JAMES WRIGHT, Esq., C.E., 12, Copthall-court, London; or of Messrs. SMITH and PICKERING, solicitors, Merthyr Tydfil; and at the temporary offices of the company, 10, Culham-street, E.C.

THE DUNRAVEN UNITED COLLIERIES COMPANY (LIMITED).—Notice is hereby given, that the LIST OF APPLICATIONS FOR SHARES in this company WILL BE CLOSED ON MONDAY, the 30th, for London, and TUESDAY, 31st Oct., for the country.
T. C. SIMMONS, Sec.
Temporary offices, 10, Culham-street, 21st Oct., 1865.

MESSRS. BREWIS AND LYNCH, 3, CROWN COURT, OLD BROAD STREET, LONDON; and 73, CLAYTON-STREET, NEW-CASTLE-ON-TYNE.

MESSRS. BEOR AND KENRICK, MINING ENGINEERS, RUABON, NORTH WALES.
Messrs. BEOR and KENRICK, through their practical acquaintance with the mineral properties of North and South Wales, are open to survey estates and mines, and report thereon.

MR. ALBERT E. PRINCE, MINING ASSAY OFFICES, CAMBORNE, CORNWALL, is in a POSITION to GIVE ADVICE (through some of the most experienced agents) as to the BEST PAYING and SPECULATIVE INVESTMENTS. 1 1/4 per cent. charged on all mine share transactions.

ROBERT LIBBY AND SON, MINE AND SHAREDEALERS, &c., CAMBORNE, CORNWALL, Recommend the undermentioned mines for immediate investment:—
Wheel Trannack. Crane. Stray Park.
East Lovell. Rosewarne United. Margaret.
Wendron Consols. North Dolcoath. New Chifford.
Mines inspected by competent agents.

GOLD MINING.—THE UNDERSIGNED, who has had a large experience in the management of auriferous quartz mines at home and abroad, OFFERS HIS SERVICES TO REPORT UPON or TAKE THE MANAGEMENT OF MINES IN NORTH WALES. THOS. BELT, Prince of Wales Mine, Dolgellau.

CAPT. J. RABEY OFFERS FOR SALE FIFTY SHARES, at the net price of £25 per share, in the CAL-B-FANT MINE, joining the Great Miners Mine, and one of the best prospects in the district, being all whole ground, and the mine paying for itself now at the shallow depth of 40 yards.—Address, Captain J. RABEY, Coopton, near Wrexham, Denbighshire, North Wales.

THE TYNE GENERAL ENGINEERING COMPANY (LIMITED).

Capital £100,000, in 10,000 shares of £10 each.
Incorporated under the Companies Act, 1862, whereby the liability of each member is limited to the amount of his shares.
Deposit on application £1, and £4 on allotment.
First issue of shares £60,000.

ISAAC CHARLES JOHNSON, Esq., Manufacturer, Gateshead-on-Tyne (Mayor of Gateshead).—CHAIRMAN.
JOHN BRAITHWAITE, Esq., C.E., 18, Abingdon-street, Westminster.—DEPUTY-CHAIRMAN.

WILLIAM HENRY CUTLER, Esq., C.E., Eton House, Twickenham.
THOMAS BARNABAS DAFT, Esq., C.E., Mark-lane Chambers, E.C.
JAMES SNOWBALL, Esq., Manufacturer and Colliery Owner, Gateshead-on-Tyne.
ROBERT RADIE, Esq., Blaydon-on-Tyne (for several years in the mechanical engineering department of Sir W. G. Armstrong and Co.)

MANAGER OF WORKS.
Mr. George Kenney, Gateshead-on-Tyne (for 15 years with Sir W. G. Armstrong and Co., and lately carrying on engineering business at Gateshead-on-Tyne).

London The Union Bank of London.
Newcastle Woods and Co.
Solicitors.
George Dixon, Esq., 5, New Bowell-court, W.C., London.
Joseph W. Swinburne, Esq., Gateshead-on-Tyne.

Brokers.
Amelius George Alt, Esq., London, 76, Old Broad-street.
Messrs. Eadie and Co., Newcastle, 16, Dean-street.
J. Nicholson, Esq., Whitehaven, 18, Church-street; Carlisle, 50, Castle-street.

Henry Wilson, Esq., Darlington.
Messrs. Jenkinson and Son, Manchester, Peel Chambers.
E. M. Kidd, Esq., Nottingham, Long-row.
Wm. Clegg, Esq., Rochdale, 5, Drake-street.
Lawrence Kilgour, Esq., Liverpool, 6, Water-street.

Auditors.
London Messrs. Kennedy and Abbott, Public Accountants, Moorgate-street.
Newcastle .. Messrs. Gillespie, Swinburne, Richardson, and Co., Public Accountants, Royal-arcade.

Consulting Engineers.
Messrs. Warrington and Brown, 6, John-street, Adelphi, London.
Secretary—James Isaacs, Esq., A.I.A.

Temporary Office.
LONDON 13, MOORGATE STREET, E.C.
NEWCASTLE 15, DEAN STREET.

ABRIDGED PROSPECTUS.

The Tyne General Engineering Company is projected to supply the daily-increasing demand for marine engines, and hydraulic and other machinery, consequent on the rapid development and growing importance of the port of Newcastle, and which the available engineering power of the district has so little capacity to satisfy that serious loss by unavoidable delay, not only in the performance of original contracts, but also in the execution of complicated and extensive repairs, is of frequent recurrence.

The directors have secured at a moderate rental and option of purchase premises at South Shore, Gateshead, having the advantage of buildings originally erected at great cost, well suited for the operations of this company, comprising a river frontage of 550 ft., a roadway, and with easy access by tramway to the North-Eastern, North British, and Newcastle and Carlisle Railways, thus placing the works in ready communication with all parts of the kingdom by sea and rail.

The directors are justifiably sanguine of securing success for this undertaking, for already the offer of a large number of orders indicates that an ample and a lucrative business will be readily obtained. The determination of the directors being, however, to assure to the shareholders from the commencement of operations liberal dividends, it is not intended to encumber the profits with an outlay for works and plant beyond that which may be deemed immediately necessary.

In view of the limited expenditure contemplated, the directors do not intend to call up more than £25,000 of the capital of the company. This amount is estimated to be ample to meet the cost of buildings and plant, and to provide the working expenses.

Calculations based on the results of similar enterprises on the Tyne and Clyde, the well-known success of private firms, and the reports of eminent engineers having been considered, the most moderate computation justifies the expectation of dividends at the rate of not less than £20 per cent. per annum.

A large number of shares have already been applied for and taken up. The directors having engaged a competent manager and experienced staff, and having completed their negotiations for the site of the works, will as soon as possible commence operations.

Full particulars may be obtained, and the Articles of Association inspected, at the temporary offices of the company—London, 13, Moorgate-street, E.C.; Newcastle, 15, Dean-street.

Full prospectuses and forms of application for shares may also be obtained from the brokers and the secretary, in London, as above.

CASHWELL LEAD MINING COMPANY (LIMITED).

Divided into 6400 shares of £3 each, £2 10s. paid up.

WILLIAM FRANCIS DE MEY, Esq., M.D., Eldon-square, Newcastle-on-Tyne.
CHAIRMAN.

JOHN CLARK, Esq., Wharfedale, Gateshead-on-Tyne.
WILLIAM C. ARMISTON, Esq., Alendale-town, Northumberland.

Mr. SIMON JOEL, Newcastle-on-Tyne.
Mr. THOMAS SLATER, Newcastle-on-Tyne.

Mr. JOHN T. THOMPSON, Newcastle-on-Tyne.
Secretary—Mr. Matthew Armstrong, Cumberland-row, Newcastle-on-Tyne.

MANAGER AT THE MINES—Captain John Peart, Alston.

Cashwell was formerly known as Douke West End proper, and the eastern portion of this extensive royalty as Douke East End (see "Hunt's Mineral Statistics"), and has produced in its opening out above 3000 tons of lead ore of excellent quality. It is situated about six miles south from Alston, Cumberland, and adjoins the once-famed mines of Cross Fell to the east, and the operations of Cashwell have been principally confined to opening up a rich mine on the noted lodes or veins of Cross Fell, the main vein or lode running through the entire length of Cashwell. The importance of this fact cannot be overestimated, as from this vein Cross Fell produced its large returns of lead ore in its former workings, as much as 200 to 300 tons per month having been obtained for numbers of years, which, calculated at the low price of £15 per ton, gives £30,000 per annum; and the gross return of this one magnificent property cannot have been far short of one million pounds sterling. Such success as this has from time to time encouraged Cashwell shareholders to push on their operations regardless of expense, and they are now about to receive a recompense equal to their indomitable perseverance. In Westgarth Forster's "Treatise on a Section of the Strata from Newcastle-on-Tyne to the Mountain of Cross Fell," published in 1821, he characterises Cross Fell as "the second mine of importance in its riches for lead ore in the district, and he thus speaks:—"This noble vein was discovered only a few years ago, and carried lead ore up close to the moss on the coal hills." In another authority of considerable repute, and more recent, being published in 1861, in his able and learned work on "The Laws which Regulate the Deposition of Lead Ore in Veins of Alston Moor, by William Wallace, Esq., of the London Lead Company," thus dilates upon the veins of Cashwell; he says:—"Near the source of Cashwell, Doukeburn vein contained lead ore, chiefly in the three yards level and strata below, to the bottom of the scar limestone. This ore deposit descends so low as the copper hazles; and it will be seen upon inspection of the general map (accompanying the work) that it is situated in that portion of the vein connected with conditions most favourable to the percolation and circulation of fluids, and favourable for lead ore."

Cashwell Mines have raised and sold since including June 3d, during the present year of 1865, lead ore to the extent of 300 tons; and as operations have been commenced at the eastern end of the royalty, the main vein or lode of Cross Fell having been fully proved to the extent of one mile in length, there are satisfactory indications of opening up one of the most extensive and richest mines in the kingdom. The present manager of Cashwell, Captain John Peart, succeeded Captain C. Cain, now of Newhouse, Wear-dale, one of the managers of those extensive lead mines of W. B. Beaumont, Esq., M.P. There is about £700 to the credit balance, after the payment of all liabilities to the present date, and therefore there are no calls ever expected to be made, as the mines have been opened out satisfactorily. A large sum has been expended in bringing them to their present position, the lead ore at present worked giving a profit of 40 per cent. net. A great rise in the price of shares must necessarily take place before long, there being no calls expected to be made, or no prospecting, calling for years of labour and thousands of pounds expenditure. All this has been done, and as there is only the limited number of 600 shares at 30s. to be disposed of, applications for the same will be received till the 23d of November, by Messrs. BREWIS and LYNCH, of 3, Crown-court, Old Broad-street, London, and 78, Clayton-street, Newcastle-on-Tyne, after which they can only be sold at a high premium.

THE COFFEE, COCOA, COTTON, AND GENERAL PRODUCE FREEHOLD ESTATES COMPANY OF VENEZUELA (LIMITED).

Capital £200,000, in 10,000 shares of £20 each.
A deposit of £1 per share to be paid on application, and £1 on allotment.

Prospectuses and forms of application for shares can be had by applying to the secretary, J. H. BREFFIT, Esq., at the offices of the company, No. 41, Threadneedle-street, London, E.C.

COFFEE, COCOA, COTTON, AND GENERAL PRODUCE FREEHOLD ESTATES COMPANY OF VENEZUELA (LIMITED).—NOTICE.

—NO APPLICATIONS FOR SHARES WILL BE RECEIVED AFTER THE 31st INST. 1865.

By order, J. H. BREFFIT, Secy.

MINING OFFICES, MANCHESTER.

THOMAS MOLYNEUX AND CO. MINE AGENTS, SHAREBROKERS, AND GENERAL COMMISSION AGENTS.

Information can be obtained as to purchase and sale of shares.

Office of the Havel Grove Silver-Lead Mining Company (Limited), Flintshire. Prospectuses, reports, &c., of this valuable property may be had on application to Messrs. Princess-street, Manchester.

CAPT. C. WILLIAMS, TYN-Y-WERN, TALIESIN, via SHREWSBURY, has had upwards of 30 years' practical experience in mining,

during which time he had the entire management of several English and Welsh mines. Residing in the centre of the CARDIGANSHIRE MINING DISTRICT, and in close proximity to those of MERIONETHSHIRE and MONTGOMERYSHIRE, he OFFERS HIS SERVICES TO SURVEY AND REPORT UPON ANY MINE.

CAPT. CHARLES WILLIAMS is at all times in a POSITION TO FURNISH CAPITALISTS WITH RELIABLE INFORMATION respecting MINING IN NORTH AND SOUTH WALES, in which they should embark or avoid. C. WILLIAMS has prepared a list of most of the mines that are likely to pay, and can name two or three that will turn out a great prize.

Tyn-y-Wern, Taliesin, via Shrewsbury, April 18, 1865.

MR. BRENTON SYMONS INSPECTS AND REPORTS ON ANY MINERAL PROPERTY.

In all cases where procurable a plan will accompany his report.—18, Hatton-garden, E.C.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the WHEAL ST. ANDREW MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the ABOVE-NAMED COMPANY are REQUIRED, on or before the 15th day of November next, to SEND IN THEIR NAMES and ADDRESSES, and the AMOUNTS and PARTICULARS of THEIR SEVERAL CLAIMS on the said company, to William Mitchell, Esq., the Registrar of the said Court, at Truro, Dated Registrar's Office, Truro, October 28, 1865. WM. MITCHELL, Registrar.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the OLD WHEAL NEPTUNE MINING COMPANY (LIMITED).—TO BE SOLD, BY PRIVATE TENDER, with the sanction of the Court, in One Lot, all the interest of the said company and in the MINE SETTS or GRANTS, by virtue of which the mining operations of the said company have for some time past been carried on. And of the whole of the MACHINERY and MATERIALS of the Old Wheal Neptune Mine, in the parish of Perranaruthoe, near Marazion, Cornwall, comprising ONE 70 inch cylinder PUMPING ENGINE, 12 foot stroke, equal beam; TWO BOILERS, 11 tons each; balance bob, crusher, pumps, plunger poles, new capstan and other ropes, cisterns, ladders, chains, launders, kibbles, and a variety of other articles in general use in mines, including account house and office furniture, &c., &c.

If not sold in one lot, the mine sets will be sold in one lot, and the machinery and materials in another. An inventory of the materials and all necessary particulars will be furnished on application by Mr. WILLIAM FOLKINGHORN, of Woodlands, near Par Station, Cornwall, one of the Liquidators, to whom the tenders should be sent on or before the 13th day of November next.

If no sufficient tender is accepted, the pitwork will be drawn to the surface, and the whole property sold in lots. H. S. STOKES, Truro (Agent for Benham and Tindell, 18, Essex-street, Strand, London, the Solicitors for William Joseph White, one of the Liquidators of the said company). HODGE, HOCKIN, AND MARRACK, Truro (Solicitors for the said Wm. Folklinghorn). Dated Registrar's Office, Truro, October 24, 1865.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

IN RE WHEAL HARTLEY MINE. TO BE SOLD, pursuant to an Order made in a Cause Paul v. Dowling and Another, dated the 7th day of September last, at the Registrar's Office, at Truro, on Wednesday, the 8th day of November next, at One o'clock in the afternoon—50 (6000ths) PARTS or SHARES of the defendant Thurstan Weatherhead, Of and in the said MINE. HODGE, HOCKIN, AND MARRACK, Truro (Plaintiff's Solicitors). Dated Registrar's Office, Truro, October 25, 1865.

In Chancery.

FOR SALE, THE THORNLEY AND LUDWORTH COLLIERIES, IN THE COUNTY OF DURHAM.

TO BE SOLD, pursuant to a Decree of the High Court of Chancery, made in a Cause of Gully v. Wood and Others, with the approbation of the Master of the Rolls, in One Lot, by Mr. CHARLES BROUGH, the person appointed by the said Judge, at the Queen's Head Hotel, Pilgrim-street, Newcastle-upon-Tyne, on Tuesday, the 31st day of October, 1865, at Two of the clock in the afternoon precisely, those IMPORTANT, very VALUABLE, and well known current-rod sea sale COLLIERIES, called THE THORNLEY AND LUDWORTH COLLIERIES, in the county of DURHAM, the property of the Thornley Coal Company, containing, with their associated coal fields, 3725 acres, or thereabouts, together with the COLLIERY PLANT of pits, ENGINE HOUSES, ENGINES, MACHINERY, RAILWAYS, COKE OVENS, screens, stores, MATERIALS, live and dead stock, agents and workmen's houses, workshops, stables, granaries, farms, and farming stock, and all other erections and buildings whatsoever to the same several collieries belonging or appertaining and held therewith.

Particulars, with plan and conditions of sale, may be had gratis, and further information obtained (and all the collieries viewed), on application to Mr. JOSEPH SMITH, jun., viewer, Monkwearmouth; Mr. THOS. BELL, viewer, Thornley Colliery; in London, to Messrs. WILLIAMSON, HILL, and Co., No. 10, Great James-street, Bedford-row; Messrs. SHUM and CROSSMAN, 3, King's-road, Bedford-row; Messrs. HORN and MURRAY, No. 7, St. Martin's-place, Trafalgar-square; and Mr. JAMES CROWDY, No. 17, Serjeant's Inn, Fleet-street; also in the country, to Mr. THOMAS BELK, solicitor, Hartlepool; Messrs. R. P. and H. PHILLIPS and Messrs. GRIFFITHS and CROUGHTON, solicitors, Newcastle-upon-Tyne; or of the Auctioneer; at the place of sale; and at the principal towns in the counties of Northumberland and Durham.

MR. JOHN BURGESS, AUCTIONEER AND VALUER OF LAND, MACHINERY, &c., BARNSCOOSE, REDRUTH, has FOR SALE:—TWO FIRST-CLASS bright 70 in. cylinder ENGINES and FIVE BOILERS; 24 in. DRAWING ENGINE, nearly new; 20 in. HORIZONTAL DRAWING ENGINE and CRUSHER; 3 capstan ropes, 8, 10, 14, and 16 in., good; 2 catheads, capstans; pitwork, 10, 12, 14, 16, 18, and 20 in.; sundry other materials. Also several thousand slates—roofs of engine and other houses. By private contract if immediately, on application to the Auctioneer, Barncoose, Redruth.

POSTPONEMENT OF PROSPER MINE SALE TO NOVEMBER 6TH.

Treloweth and Prosper Mine Sales happening on the same day, 1st November, Prosper Sale will not be held till Monday, 6th November, at Eleven o'clock.

MR. BURGESS is to SELL, BY PUBLIC AUCTION, on Monday, November 6th (and not on Wednesday, November 1st, as previously advertised), at Eleven o'clock in the forenoon, at WHEAL PROSPER MINE, Breage, the following MINE MACHINERY, MATERIALS, &c., viz.:—

ONE 80 in. cylinder PUMPING ENGINE, 9 ft. stroke in the cylinder, and 8 ft. in the shaft. ONE BOILER (8 tons) and fittings, first piece of rod, sagged caps and side plates.

Large double crab winch. Angle bob and straps. 3 1/2 in. iron bucket rods. 24 18 in. pulleys. 2 large draw screws. Large beam to weigh 3 tons. 2 large beams. Large pin chain. Large plate sagged eyes, large rod and flat iron, 2 tram wagons. Dated Barncoose, Redruth, October 17, 1865.

TUESDAY, 7th NOVEMBER, AT NOON PRECISELY.

PRINCE ALBERT CONSOLS, NEAR PERRAN PORT, PORT TOWN, TRURO, CORNWALL.

MR. BURGESS, LAND AND MACHINERY VALUER, WILL OFFER FOR POSITIVE SALE that FIRST-CLASS ROTARY ENGINE, STAMPS, and all other MATERIALS on the PRINCE ALBERT CONSOLS MINE, comprising:—

ONE 24 in. cylinder (bright) ROTARY ENGINE, with ONE BOILER and fittings, 10 tons, two fly wheels, 21 ft. diameter, about 10 tons each, drawing gear to stamps, and other connections.

2 sweep rods, 70 fms. 1 1/2 in. iron flat rods, stands, and 18 in. pulleys and brackets. 12 heads stamps, most modern lifters and connections. 7 ft. 8 in. engine, 11 and top door pieces. 16 ft. 8 in. flat bottom windbox. 110 ft. 7 in. plunger pole, pole case, stuffing box and gland.

At Flat Rod Shaft. 65 fms. zinc air pipes. 20 fms. wood air pipes. 70 fms. 6 and 7 in. launders and stands. 12 fms. 1 1/2 bucket rods. 2 1/2 to 3 cwt. of powder, good condition. Small scales, beam, sundry rope, chain, old iron, sledges, miners' tools, hand saws, and sundries. 26 in. smith's bellows, anvil, screw stocks, and tools. Bucket prongs, 2 tram wagons, tram round buddle cone, tin dressing tools, Flintshire fire brick, timber, plank, and old iron.

Functional attendance is invited, as the whole must be sold on the day of sale. Any further information can be obtained of Capt. WILLIAM CHAPPEL, Manager of Penhale Wheal Vor, Helston; the agent on the mine; or to the auctioneer, Barncoose, Redruth.

NOTE.—The engine and boiler were made by Sandys, Vivian, and Co., founders, Hayle, Cornwall; they are in first-rate condition, with all modern improvements.

WHEAL ARTHUR, CALSTOCK, CORNWALL.

MESSRS. RENDELL AND SON WILL SELL, BY PUBLIC AUCTION, on the above mine, on Tuesday, the 7th of November, 1865, all the VALUABLE MACHINERY and MATERIALS thereon, viz.:—

A very superior 60 inch cylinder PUMPING ENGINE, 10 ft. stroke in cylinder and 9 ft. in shaft, with TWO capital BOILERS, 10 tons each, woodwork, and first piece of rod, by Harvey and Co., all of the best construction and in excellent condition.

Good capstan, shears, rods, strapping plates; and numerous lots of 10, 11, 12, and 18 inch pitwork (as good as new); 275 fms. very superior 9-16th chain, made specially by Harvey and Co., also 1/2 in. chain; about 65 fms. new 6 in. whip rope, a quantity of good black and other rope, several flat rod and chain pulley wheels; 2, 3, and 4 feet shovels; spar and pinion wheels, staples, glands, bolts and bars, several tram wagons, kibbles, several tons tram iron, 6 good sheds, a quantity of new and old iron, screw stocks, grindstones, bellows, vice, very good large and small winches, good blocks, hand screw, round biddles, hatches, frames, dressing tools, miners' chests, horse whim, &c.; a very useful and handy weighing machine, equal to 25 cwt., nearly new; numerous lots of new and old timber, good planks, and a great many large and small launders and stands, old junk, &c.

A very superior WATER WHEEL, 36 ft. by 3 ft., with wrought iron axle, cast iron centre, with sockets and cast iron rings, to which is attached a good double acting drawing machine, and on the other side a good crusher, including woodwork, &c., all of the best possible construction, by Harvey and Co., and in capital condition.

Three small good water wheels, iron rods, with numerous other articles. Refreshments will be provided, and the sale will commence at Eleven o'clock.

For viewing the same, apply to Capt. CARPENTERS, on the mine; and for any further information to Mr. W. WATSON, 27, Abchurch-lane, Fleet-street, Plymouth.

Dated Auction and Emigration Office, Callington, October 20, 1865.

CORNWALL. CARADON VALE MINE, SITUATED IN THE PARISH OF ST. IVR, IN THE COUNTY OF CORNWALL.

MR. MURRAY has received instructions to SELL, BY PUBLIC AUCTION, on Tuesday, the 31st day of October, 1865, at Caradon Vale Mine, near Bodmin Land, St. Ives, Cornwall, all the FIRST-CLASS and VERY VALUABLE MINE MATERIALS, count-house furniture, &c., thereon, comprising:—

ONE 45 in. cylinder STEAM ENGINE, 9 ft. stroke, equal beam, with ONE BOILER, 12 tons, nearly new, by West and Sons.

1 8 arm capstan. 1 60 ft. shears, with 2 1/2 ft. sheaves. 100 fms. of 12 in. capstan rope. 1 4 arm capstan. 1 66 ft. shears, with 2 1/2 ft. sheaves. 120 fms. 8 in. capstan rope. 70 fms. 11 in. main rods. 40 fms. 1 1/2 in. round iron rods.

1 balance bob, 28 ft. beam, with strap-ping plates, guageon, bishop's head, complete. 1 12 in. H piece. 1 12 in. door piece. 1 12 in. windbox. 1 12 in. 10 ft. pole case. 1 12 in. stuffing box and gland. 1 12 in. pole, 12 ft. long. 18 12 in. pumps. 2 12 in. 4 ft. matching. 1 10 in. working. 1 9 1/2 in. ditto. 2 11 in. windboxes. 2 11 in. door pieces. 9 11 in. pumps. 1 8 in. working.

Smith's bellows, anvil, screwing stocks, taps and plates, smith's mandril, smith's horse, vice, set of single and double blocks, a quantity of new and old cast-steel, four miners' chests, four wheelbarrows, a large quantity of good and useful timber, 1 ton of railroad iron, a quantity of various sized nails, two pairs of yokes, a large quantity of smith's tools, a grinding stone, carpenter's bench and chest, several lots of new and old iron, staples and glands, a very good patent weighing machine, nearly new.

All the above materials are of a first-class kind; no expense has been spared in procuring the very best machinery, and is in every respect well deserving the attention and attendance of mine agents and purchasers. The auctioneer requires a punctual attendance, the lots being valuable and numerous, and will be sold in one day.

To view the lots, apply to Capt. JAMES JONES, on the mine, who will give every information respecting the property. Luncheon will be provided at 11, and the sale will commence at 12 o'clock at noon precisely.

£2250 to lend on the security of farm stock or other property, to be divided in small sums, apply to the auctioneer.—Dated Castle Hill, Liskeard, Oct. 14.

WHEAL LOVELL MINE, IN THE PARISH OF WENDRON.

MR. KERBY WILL SELL, BY AUCTION, in One Lot, on Wednesday, the 15th of November next, at One o'clock P.M. precisely, WHEAL LOVELL MINE, in the parish of WENDRON, together with all the MACHINERY, THERIAUX, halvans, and leavings thereon and belonging thereto. The machinery consists of ONE 50 in. PUMPING ENGINE, with TWO BOILERS about 18 tons. ONE 17 1/2 in. STEAM WHIM and BOILER, about 9 tons. ONE 24 in. STEAM STAMPS, with 24 heads, and BOILER about 8 1/2 tons; 170 fms. of pitwork, 240 fms. of skip road, 240 fms. of ladders, 80 fms. of 1 1/2 in. iron rods, with bobs, skips, whim chain, tin dressing apparatus, and other necessary appliances.

The mine is held for the residue of a term of 21 years, commencing from the 29th day of September, 1843. The sett is very extensive, being in length upwards of half a mile and in breadth about 500 fms., and is bounded on the east and south by East Lovell and New Wheal Lovell, and on the west and north by Trevenen Mine and Truapen Consols, and in traversing the several lodes in these several mines.

Wheal Lovell has been one of the most productive tin mines in the county of Cornwall. Upwards of £250,000 worth of tin has been sold from the mine, and large dividends from profits have been declared.

The present company commenced operations about two years since; have drained the mine, cleared several of the levels, and brought it into good working order, at an outlay of upwards of £8000. An excellent opportunity is thus offered for investment.

The mine will be open for inspection till the day of sale. Further particulars may be had of Capt. PHILLIPS, on the mine; or of Mr. KERBY, of Helston, the auctioneer.—Dated October 25, 1865.

PARISH OF ALTARNUN, COVE, CORNWALL.

GREAT TREGUNE CONSOLS.—AN AUCTION will be HELD at this mine, on TUESDAY, the 7th day of November last, at Twelve o'clock at noon, for the purpose of SELLING, in One Lot, all the remaining INTEREST in the case of the said MINE, the MACHINERY and MATERIALS thereon, particulars of which will appear in next week's Journal.—For viewing the same, apply to Mr. JOSEPH BELLINGHAM, the officer in charge; or to Mr. F. HARRIS, solicitor, Truro.

Dated Truro, October 27, 1865.

COPPER MINE IN CORNWALL TO BE DISPOSED OF, with all the WORKING PLANT, in first-rate order, and ready for immediate operations. This sett contains numerous copper lodes parallel to the one the engine is erected on. Returns can be made from one of the lodes immediately. Term, 21 years. Royalty, 1-20th. This property is situated in one of the best mineral districts in Cornwall, and offers one of the greatest chances of success in the county.—Address, "A.B." MINING JOURNAL office, 26, Fleet-street, London, E.C.

VALUABLE INVESTMENT FOR SALE.—AN INTEREST IN VALUABLE MINES AND PROPERTY, situated in SOUTH AMERICA, near a safe shipping port, to which a railway is nearly completed.—For information, apply by letter, addressed to "A.B." Messrs. Phillips and Sons, solicitors, 11, Abchurch-lane, King William-street, London, E.C.

PATENT COKE OVENS.—TO BE SOLD, OR LET, SIXTY PATENT COKE OVENS, with WASHING MACHINE, situated on the railway near Slikstone, in the centre of the Barnley and Slikstone Coal Fields, and immediately adjoining extensive collieries. These ovens, which are built on the most approved principles, are capable of turning out from 400 to 500 tons of coke per week, may be purchased or rented on advantageous terms, and would prove a most lucrative investment, the demand for coke being unlimited.—Application to be made to Messrs. ALFRED ALLOTT and Co., Sheffield, or to Messrs. BRANSON and Son, solicitors, Sheffield.

LEAD MINES TO LET, IN SCOTLAND.—TO BE LET, for such a number of years as may be agreed on, the LEAD MINES at STRY, in INVERNESS-SHIRE, SCOTLAND, belonging to the Lord Lovat. The mines are situated about twelve miles from Beaulieu Railway station, and where there is also a shipping port.—For further particulars, application may be made to CHRISTOPHER L. BRADLEY, Esq., Prior House, Richmond, Yorkshire; or to JOHN PEAR, factor for Lord Lovat, at Beaulieu, N.B.—Factor's Office, Beaulieu, N.B., October 11, 1865.

SLATE QUARRIES, TO BE LET.—SALT DINAS SLATE QUARRY, situated in the parish of LLANFAFWEL, in the county of BRECON, ten miles from Builth, five miles from the intended railway station at Maesodyn-y-fordd, on the Central Wales Railway, and six from the Mid-Wales Railway at Newbridge-on-Wye.

The slate vein runs up from the river to the top of the mountain to a height of 814 ft. is about half a mile in length, and 200 yards in width. Openings have been made in the vein, and although penetrated only to a few feet from the surface, it produces good slates. The metal and quality of the slates is strong and durable, will bear carriages to slates. Any part of the world, and stands the heat necessary for enamelling perfectly.

There is room for tipping rubbish for centuries, and a plentiful supply of water at all times of the year for machinery. Apply to J. PRATT, Esq., land agent, Crickhowell.

TWO RAILWAY BONDS (OF £500 each, secured on a first-class line), FOR SALE, at Ten per cent.—Full particulars of Messrs. Railway and Co., 9, Spring-gardens, Charing-cross, where their "Monthly Review of Railway and Mining Securities" can be had on application.

TO QUARRY PROPRIETORS, &c.—MR. SAMUEL JENKINS, DINAS MAWDWY, is now preparing for the press a work on the "QUARRIES OF THE PRINCIPALITY, THEIR HISTORY," &c., and as he wishes to make it as complete as possible, he would invite Quarry Proprietors, Managers, &c., to favour him with particulars concerning any quarries they may be connected with. Also, brief notices of any new improvements in machinery, &c.

TO SLATE QUARRY PROPRIETORS AND OTHERS.—W. P. DAVIS, having had MANY YEARS' PRACTICAL EXPERIENCE IN SLATE QUARRIES, IS PREPARED TO INSPECT AND FAITHFULLY REPORT THEREON.—Address, Mr. W. P. DAVIS, Wadebridge, Cornwall.

MR. CHARLES BAWDEN, INSPECTING MINE AGENT. ST. DAY, CORNWALL, OFFERS HIS SERVICES TO CAPITALISTS SEEKING TO INVEST IN bona fide MINES.

MANCHESTER, AND WEST END OF LONDON. MR. W. HANNAM, MINING, SLATE QUARRYING, INSURANCE, AND GENERAL SHAREBROKER, ROYAL INSURANCE BUILDINGS, KING STREET, W. 31, REGENT STREET, LONDON, S.W.

INSTANTANEOUS COMMUNICATION with the STOCK and MINING EXCHANGES, avoiding the delay and annoyance of waiting the stock to ascertain prices.

A Monthly Investment Circular on application.

NORTH OF EN

THE MINING SHARE LIST

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total div.	Per Share.	Last Paid.
1200	Alberley Edge (cop.), Cheshire [L.]	10 0 0	—	—	11 3 0	0 15 0	Oct. 1884
4000	Bedford United (copper), Tavistock	2 8 0	—	—	13 11 0	0 2 0	Oct. 1884
1200	Boswell (tin), Cornwall	1 0 0	—	—	1 8 0	0 5 0	May, 1884
200	Botallack (tin), Cornwall	91 8 0	—	—	433 10 0	3 0 0	Aug. 1885
10000	British Steel (iron), [L.]	7 0 0	—	—	9 per cent.	—	Aug. 1885
1000	Brigham Hematite (iron), [L.]	7 6 0	—	—	0 8 0	0 6 0	Nov. 1884
1000	Burnley (lead), Cardigan [L.]	12 0 0	—	—	6 10 0	0 10 0	July, 1885
1200	Bryn Gwyn (lead), Merioneth [L.]	9 0 0	—	—	5 3 0	0 13 0	Aug. 1885
916	Cargill (silver-lead), Newry	18 7 0	—	—	11 15 0	0 1 0	Aug. 1885
1000	Carden (copper), St. Cleer [S.E.]	15 0 0	—	—	25 30	280 10 0	2 0 0
2000	Carden Amalgamated (cop.), Gwyn.	30 0 0	—	—	35 6 0	0 10 0	June, 1885
2000	Copper Mines of England	25 0 0	—	—	7 1/2 per cent.	—	Half-yearly.
40000	Ditto	100 0 0	—	—	1 per cent.	—	Half-yearly.
867	Cwm Erddin (lead), Cardigan [L.]	7 10 0	—	—	17 10 0	0 1 0	Oct. 1885
120	Cwmystwith (lead), Cardigan [L.]	40 0 0	—	—	293 10 0	0 5 0	Sept. 1885
280	Darwent Mines (all-lead), Durham	300 0 0	—	—	189 10 0	0 7 0	June, 1885
1200	Devon St. Con. (cop.), Tavistock [S.E.]	1 0 0	—	—	585 870	990 0 0	0 8 0
518	Dolcoath (copper), [L.]	128 17 6	—	—	805 20 0	0 9 0	Oct. 1885
518	East Bassett (cop.), Redruth [S.E.]	39 0 0	—	—	20 23	125 0 0	1 0 0
6000	East Carron (copper), Redruth	3 15 0	—	—	5 1/2 per cent.	—	Nov. 1884
6144	East Carron (copper), Redruth	3 15 0	—	—	13 10 0	0 16 0	Oct. 1885
300	East Carron (copper), Redruth	32 0 0	—	—	107 10 0	0 2 0	Aug. 1885
120	East Pool (tin), Cornwall	24 0 0	—	—	289 10 0	0 4 0	June, 1884
5000	East Rosewarne (cop.), Gwyn.	2 15 0	—	—	0 9 0	0 2 0	Oct. 1885
2000	Foxdale (lead), Isle of Man [L.]	25 0 0	—	—	67 0 0	0 1 0	May, 1885
1000	Frank Mills (lead), Christow	18 6 0	—	—	2 13 0	0 6 0	Aug. 1885
15000	Great Laxey (lead), Isle of Man [L.]	4 0 0	—	—	3 5 0	0 14 0	Sept. 1885
1000	Great W. Vort (tin), [L.]	40 0 0	—	—	7 17 0	0 17 0	Sept. 1885
1014	Hierodotus (id.), near Liskeard [S.E.]	100 0 0	—	—	15 0 0	0 5 0	Aug. 1884
400	Lisburne (lead), Cardigan [L.]	18 0 0	—	—	34 5 0	0 1 0	Aug. 1885
2000	Masey (lead), [L.]	20 0 0	—	—	435 10 0	0 3 0	Aug. 1885
4000	Marine Valley (copper), Cardigan	4 10 0	—	—	1 0 0	0 1 0	Oct. 1884
9000	Minera Boundary (copper), Wrexham [L.]	1 0 0	—	—	3 2 0	0 2 0	June, 1885
1800	Minera Mining Co. [L.] (id.), Wrexham	25 0 0	—	—	181 10 0	0 15 0	Aug. 1885
20000	Mining Co. of Ireland (cop., lead, coal)	7 0 0	—	—	19 18 11	0 16 1	July, 1885
40000	Mynydd (iron), [L.]	2 10 0	—	—	0 4 0	0 2 0	April, 1884
250	Nanty Mines (lead), Montgomery	30 0 0	—	—	7 0 0	0 1 0	June, 1884
6000	New Birch Tor and Vetter Co. (tin)	1 8 0	—	—	0 18 0	0 2 0	Oct. 1885
5936	North Trekerrey (copper), St. Agnes	3 1/2 per cent.	—	—	0 18 0	0 2 0	Feb. 1884
200	Parys Mines (copper), Anglesey [L.]	50 0 0	—	—	147 0 0	0 5 0	Aug. 1885
1123	Providence (tin), [L.]	10 6 7	—	—	78 7 6	1 2 0	Aug. 1885
612	South Carron (cop.), St. Cleer [S.E.]	1 8 0	—	—	496 10 0	0 6 0	Sept. 1885
6000	Tincroft (cop.), Pool, Illogan [S.E.]	9 0 0	—	—	17 1 0	0 10 0	June, 1885
6000	West Bassett (copper), Illogan [S.E.]	1 10 0	—	—	26 14 0	0 5 0	July, 1885
6000	W. Chiverton (id.), Penryn [S.E.]	—	—	—	6 15 0	1 5 0	Aug. 1884
200	West Damsel (copper), Gwynap	38 10 0	—	—	63 10 0	1 0 0	Nov. 1884
400	W. Wh. St. Con. (cop.), [L.]	47 10 0	—	—	441 0 0	4 0 0	Oct. 1885
1123	Wheat (copper), [L.]	2 6 0	—	—	612 10 0	1 10 0	Oct. 1885
1024	Wheat (copper), [L.]	20 0 0	—	—	298 0 0	0 2 0	Oct. 1885
1024	Wheat (copper), [L.]	20 0 0	—	—	15 0 0	0 10 0	Aug. 1884
1024	Wheat (copper), [L.]	20 0 0	—	—	2 11 6	0 3 0	Aug. 1884
1024	Wheat (copper), [L.]	20 0 0	—	—	59 17 6	0 10 0	Mar. 1885
100	Wheat (copper), [L.]	20 0 0	—	—	288 5 0	4 0 0	Mar. 1884
100	Wheat (copper), [L.]	20 0 0	—	—	343 8 0	5 0 0	Mar. 1884
3000	Wheat (copper), [L.]	20 0 0	—	—	—	0 10 0	Oct. 1885
100	Wheat (copper), [L.]	20 0 0	—	—	195 10 0	211 15 0	5 0 0
1040	Wheat (copper), [L.]	20 0 0	—	—	18 19	62 12 6	0 12 0
7000	Wicklow (copper), [L.]	2 10 0	—	—	18 0 0	0 6 0	May, 1885

[* Dividends paid every two months. † Dividends paid every three months.]

BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

240	Boscan (tin), St. Just	20 10 0	—	—	36 10 0	1 0 0	Mar. 1882
1500	Conduff (cop., tin), Camborne	76 10 0	—	—	85 0 0	2 0 0	June, 1882
2450	Cook's Kitchen (copper), Illogan	18 9 0	—	—	7 10 0	0 7 0	May, 1882
1000	Croft Hill (copper), Redruth	12 0 0	—	—	2 7 0	0 2 0	Sept. 1882
1055	Cradock Moor (copper), St. Cleer	9 1 0	—	—	0 12 0	0 1 0	May, 1885
12000	Drake Walls (tin), Cornwall	1 0 0	—	—	0 18 0	0 1 0	May, 1885
1000	Dyfnwyl (lead), Wales	12 6 0	—	—	0 17 6	0 2 0	Jan. 1884
1000	East Wheal Lovell (tin), Wendron	8 0 0	—	—	1 10 0	0 10 0	May, 1884
940	Fowey Consols (copper), Tavyardreath	4 11 6	—	—	41 9 3	0 2 0	June, 1882
10240	Gunnislake (Chitlers' Adit) (copper)	0 3 0	—	—	0 3 0	0 1 0	Mar. 1882
640	Mount Pleasant (lead), Mold	4 0 0	—	—	18 18 1	0 7 0	Aug. 1882
8000	Orehead (lead), Flintshire	0 8 0	—	—	0 10 0	0 0 0	Mar. 1882
1772	Polbreton (tin), St. Agnes	15 0 0	—	—	7 19 6	0 10 0	Nov. 1882
6100	Polbreton (tin), St. Agnes	15 0 0	—	—	1 0 0	0 1 0	July, 1883
6000	Rosewell Hill and Ransom (copper)	8 0 0	—	—	0 10 0	0 1 0	May, 1883
612	South Toulgo (cop.), Redruth	8 0 0	—	—	74 10 0	1 0 0	May, 1883
496	S. Wh. Frances (cop.), Illogan [S.E.]	18 18 0	—	—	370 18 1	1 0 0	Nov. 1883
4000	St. Day United (tin), Redruth	14 0 0	—	—	0 5 0	0 5 0	Mar. 1884
800	St. Ives Consols (tin), St. Ives	8 15 0	—	—	490 10 0	0 10 0	May, 1884
872	Trevelyan Consols (tin), St. Ives	15 10 0	—	—	7 0 0	0 10 0	Sept. 1884
1000	Trumpet Consols (tin), near Helston	11 10 0	—	—	11 0 0	0 2 0	Mar. 1884
1024	Vigra and Clogau (copper), [L.]	5 0 0	—	—	4 2 0	1 10 0	Oct. 1884
1024	West Carron (cop.), [L.]	11 0 0	—	—	101 13 0	0 10 0	Oct. 1884
1024	Wheat (copper), [L.]	7 0 0	—	—	0 8 0	0 10 0	Oct. 1884
1024	Wheat (copper), [L.]	7 0 0	—	—	10 0 0	0 7 0	July, 1884
1024	Wheat (copper), [L.]	7 0 0	—	—	75 5 0	1 0 0	May, 1884
1024	Wheat (copper), [L.]	7 0 0	—	—	6 13 0	0 6 0	Nov. 1884
8000	Wharfedale Mining Co. [L.]	0 5 0	—	—	—	0 0 0	Jan. 1884

FOREIGN DIVIDEND MINES.

2444	Burra Burra (cop.), South Australia	5 0 0	—	—	320 0 0	5 0 0	Sept. 1884
15000	Cape Copper Mining [L.] [S.E.]	7 0 0	—	—	2 2 0	0 17 0	June, 1885
10000	Coburn Copper Co. (cop.), Cuba [S.E.]	40 0 0	—	—	101 0 0	1 0 0	Jan. 1885
70000	English and Australian	5 0 0	—	—	1 19 0	0 3 0	Aug. 1884
10000	East Indian Coal, Calcutta [L.]	10 0 0	—	—	7 1/2 per cent.	—	Yearly.
25000	Fortuna (copper), Spain [L.] [S.E.]	3 0 0	—	—	0 14 4	0 3 0	Dec. 1884
80000	Kapunda Mining Co. Australia [S.E.]	3 0 0	—	—	21 10 0	1 0 0	June, 1884
15000	Linares (lead), Spain [L.] [S.E.]	3 0 0	—	—	0 17 0	0 1 0	June, 1884
10000	Lusitania (Portugal) [S.E.]	3 0 0	—	—	11 6 0	0 4 0	June, 1884
9275	New Wildberg (copper)	3 0 0	—	—	0 10 0	0 10 0	Aug. 1884
80000	Panulillo (copper) [L.] [S.E.]	3 0 0	—	—	10 per cent.	—	Yearly.
10000	Pontalbrun (all-lead), France [S.E.]	320 0 0	—	—	2 0 0	0 16 0	Dec. 1884
97860	Port Phillip (gold), China [S.E.]	1 0 0	—	—	0 18 0	0 1 0	July, 1884
11000	St. John del Rey [L.] [S.E.]	15 0 0	—	—	63 10 0	2 10 0	June, 1884
49174	United Mexican (copper), Mexico [S.E.]	28 5 0	—	—	2 19 0	0 5 0	Sept. 1884
10000	Vancouver (coal) [L.]	5 0 0	—	—	0 15 0	0 5 0	Nov. 1884
10000	Victoria (London) [L.] [S.E.]	1 0 0	—	—	0 19 6	0 2 0	May, 1885
40000	West Canada Mining Co. [L.] [S.E.]	1 0 0	—	—	—	0 0 0	—

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Alten and Quannagen (tin), [L.] [S.E.]	4 10 0	—	—	4 5 0	0 15 0	Nov. 1883
35000	Australasian (copper), S. Australia [L.]	7 6 0	—	—	0 10 0	0 10 0	Dec. 1883
10000	Central American (silver), [L.]	5 0 0	—	—	4 8 0	0 14 0	Dec. 1883
10000	Copacabana Mining Company, Chile [S.E.]	16 0 0	—	—	4 18 0	0 10 0	Nov. 1883
10000	Don Pedro No. Del Rio [L.] [S.E.]	0 14 0	—	—	0 9 0	0 9 0	Dec. 1883
108815	Marquette and New Granada [S.E.]	1 0 0	—	—	0 8 0	0 1 0	July, 1883
48000	Yadana Mutana (cop.), S. A. [L.] [S.E.]	3 0 0	—	—	0 5 0	0 5 0	Aug. 1883

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
35000	Alamillos (lead), Spain [L.] [S.E.]	1 15 0	—	1½	Sept. 1885
100000	Anglo-Brazilian (gold), [L.] [S.E.]	0 7 0	—	—	Dec. 1883
20000	Bear's Tin Streaming Company [L.] [S.E.]	0 17 6	—	—	Oct. 1883
25000	Capula (silver), Mexico [L.] [S.E.]	1 5 0	—	1½	Feb. 1884
30000	Chontales (gold and silver), Nicaragua [L.] [S.E.]	0 10 0	—	1½ 1 1½	Oct. 1884
10000	Copacabana Smelting [L.] [S.E.]	10 0 0	—	—	—
800	Copper Miners' Co. of S. Australia [L.] [S.E.]	—	—	—	—
75000	Dun Mountain (copper), New Zealand [L.] [S.E.]	1 0 0	—	—	—
5 000	East del Rey (gold), Brazil [L.] [S.E.]	2 5 0	—	1½	April, 1885
40 000	El Chico Silver Mining and Reduction Company [L.] [S.E.]	4 0 0	—	—	Aug. 1885
40 000	English and Canadian Mining Company [L.] [S.E.]	5 0 0	—	—	—
40 000	Fortuna (copper), West Australia [L.] [S.E.]	2 0 0	—	—	—
100 000	Frontino and Bolivia (gold), New Granada [L.] [S.E.]	1 0 0	—	3 2½ 3	Mar. 1885
100 000	Gunn (lead) [L.] [S.E.]	—	—	—	—
90000	Great Northern (copper), South Australia [L.] [S.E.]	1 10 0	—	—	—
10000	Great Northern (copper), New Zealand [L.] [S.E.]	3 0 0	—	—	—
20000	Hindostan (copper), Bengal [L.] [S.E.]	3 0 0	—	—	—
4000	Hope Silver-lead and Copper Mining Co. [L.] [S.E.]	25 0 0	—	—	—
100000	Montes Aurores (gold), Brazil [L.] [S.E.]	2 0 0	—	—	—
12000	Noradulla Coal and Iron [L.] [S.E.]	—	—	—	—
10000	Nova Scotia (land and iron) [L.] [S.E.]	1 0 0	—	—	—
10000	Ouca (copper) New Zealand [L.] [S.E.]	1 0 0	—	—	—
15000	Pachuca Silver Mining Company, Mexico [L.] [S.E.]	1 0 0	—	—	—
35000	Quebrada (copper), Venezuela [L.] [S.E.]	8 10 0	—	—	—
10178	Rhenish Consolidated (lead) [L.] [S.E.]	—	—	4½	—
50000	Rosa Grande (gold), Brazil [L.] [S.E.]	0 5 0	—	—	—
15000	San Pedro del Monte (gold), Mexico [L.] [S.E.]	2 0 0	—	—	—
10000	San Roque (lead), Spain	5 0 0	—	—	—
60000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 17 6	—	—	—
20000	Scottish Australian Mining Company [L.] [S.E.]	1 0 0	—	—	—
15000	South Europe Mining Company, Spain [L.] [S.E.]	5 0 0	—	—	—
50000	Val Antigua (gold) [L.] [S.E.]	0 10 0	—	—	—
6000	Val Bascam (silver, copper, and lead) [L.] [S.E.]	4 0 0	—	—	—
5000	Valdeomar Mining Company [L.] [S.E.]	15 0 0	—	—	—
50000	Valleancasca (gold), Italy [L.] [S.E.]	0 10 0	—	—	—
45000	Vitor Emanuel (copper), Italy [L.] [S.E.]	1 0 0	—	—	—
35000	Washoe (gold) [L.] [S.E.]	110 0 0	—	—	—
15000	Western Australian Mining Company [L.] [S.E.]	5 0 0	—	—	—
12000	White Ellen (copper), South Australia [L.] [S.E.]	1 0 0	—	—	—
80000	Worthing (copper), South Australia [L.] [S.E.]	1 0 0	—	1	—
7500	Yorke Peninsula, South Australia [L.] [S.E.]	1 0 0	—	—	—